

CLINICAL MEDICINE AND SURGERY



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• LEADING ARTICLES •

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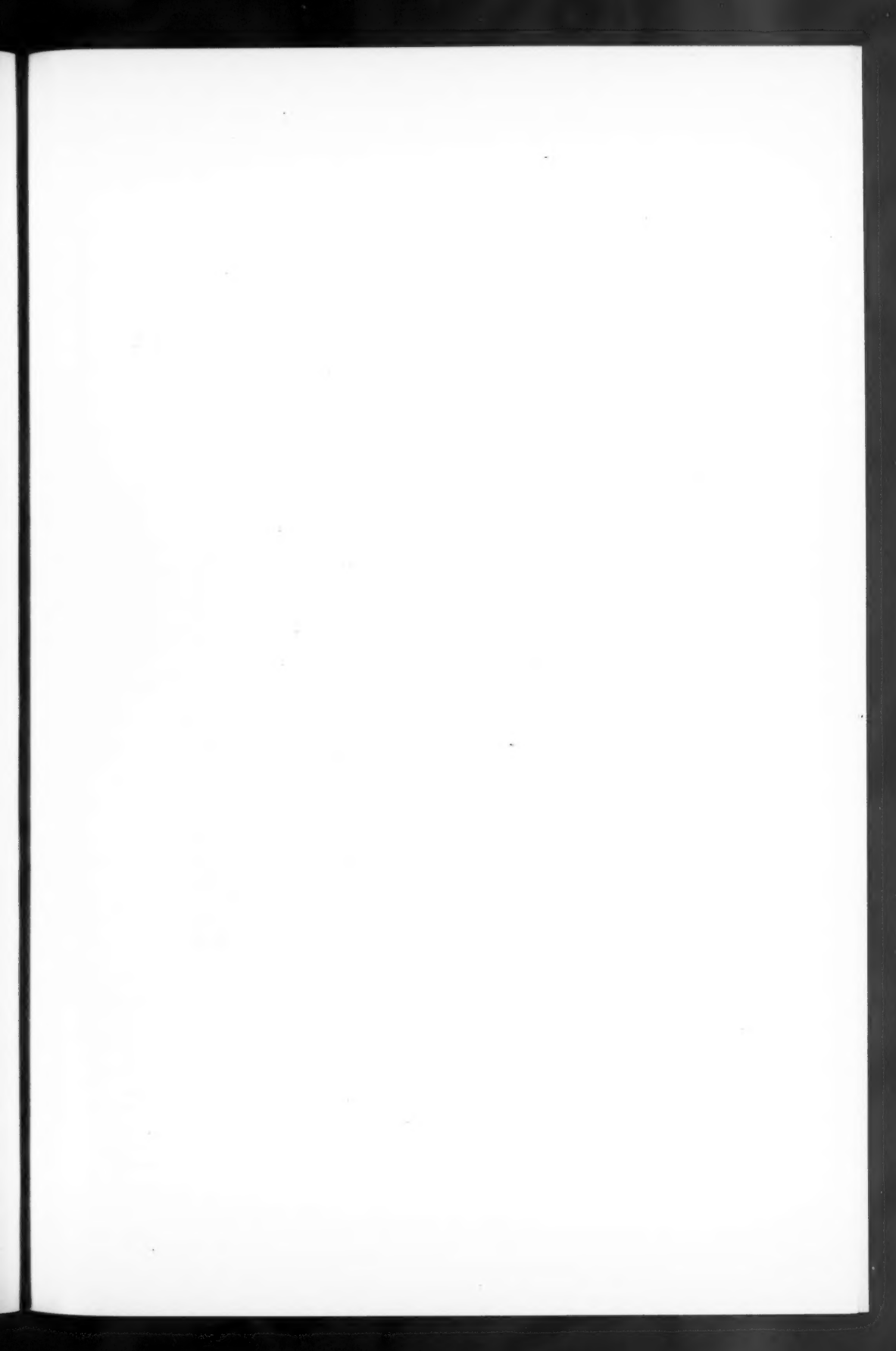
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VOL. 42

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NO. 9

EDITORIAL

Dr. James Tate Mason

President-Elect of the A. M. A.

THE successful physician should be a high type of human being; and while some have, as it were, scrambled into the profession through the back door and others have gained fame and fortune by virtue solely of masterly skill in some one line, the fact remains that the man with a background of culture and tradition stands a better chance and has an easier time in becoming an outstanding healer than the one who lacks this advantage.

The Mason family, of Virginia, were and are southern aristocrats, and during the Great Misunderstanding, "Rebels." Captain Clairborne Rice Mason was one of "Stonewall" Jackson's engineers, and his son, bearing the same name, who practiced for many years as a physician, also served under that great leader.

On May 20, 1882, a son was born to Dr. Clairborne Rice Mason and his wife, Mary (nee Woolfolk), and they called him James Tate. When the boy was fourteen years old, they sent him to Locustdale Military Academy, where he studied until 1901, when he entered the Medical Department of the University of Virginia, receiving his degree in 1905. Between 1898 and 1904 he took no vacation between school terms, but spent his summers as assistant manager of a hotel at Rockbridge Alum Springs.

After his graduation, he served his internship at the Philadelphia Polyclinic Hospital and a residency at the Municipal Hospital of

Philadelphia for the treatment of contagious diseases, at the close of which his adventurous blood came to the fore and he accepted a position as surgeon of a new ship and started on a cruise around "The Horn," to Seattle, Washington.

The Northwest appealed to young Dr. Mason so strongly that he went to work for the Pacific Coast Coal Company, and spent two years in very active general practice, attending to the medical needs and mending the injuries of the miners in two camps.

In 1909 he returned to Seattle, where he promptly made friends and, through his personal and professional relations with the sheriff, was soon placed in charge of the health of all the prisoners in King County. In 1911 he was made county coroner, and in 1914 was appointed superintendent and chief surgeon of the King County Hospital, which position, along with his large private practice, he held until 1920.

In 1918, Dr. Mason and his associates organized the Mason Clinic, and in 1919 they built the Virginia Mason Hospital, of which he has been chief surgeon and president of the Hospital Association ever since.

Dr. Mason is now consulting surgeon of the U. S. Marine Hospital, the American Mail Line, the Alaska Steamship Line and the Northern Pacific Railway Company. He is a fellow of the A. M. A. (member of the House of Delegates for several years) and the

American College of Surgeons; past-president of the American Association for the Study of Goiter, the Pacific Coast Surgical Association and Seattle Chapter of the Sons of the American Revolution; and a member of the American, Western and North Pacific Surgical Associations, as well as of several clubs and fraternities, where his pleasing personality makes him highly popular. He has made a number of contributions to the periodical literature of his profession.

The new President-Elect is a big, genial, attractive man, who loves to tell Negro stories, was a yachtsman until his boat burned, and now collects porcelain dogs. We are sure that the affairs of the Association will be more than safe in his hands.

The way to grow old gracefully is to be able to change one's mind easily.—*The Little Journal for Physicians*, Dec., 1934.

Immunize Against Diphtheria

THE grand old precept, "Mind your own business," is a fine one to follow, but there are circumstances under which it must be disregarded. For instance, if one sees anyone approaching a dangerous situation, of which he is partially or wholly unaware, one is justified in warning him, and sometimes is under obligation to do so.

There are few, if any, codes of conduct which are adequate to meet all situations or which do not require frequent revisions, in order to meet changing circumstances. The section of the A. M. A. Code of Ethics which deals with advertising is, no doubt, sound and proper, in a general way, but it was written before the days of prophylactic immunizations and the clause regarding the "solicitation of patients by personal communications" needs certain modifications or reinterpretations to meet present conditions.

Much valuable public educational work has been done, in a number of states (but not in all), regarding the prevention of diphtheria, but the vast majority of parents are not yet sufficiently impressed with the importance of this procedure, nor aware that it can be accomplished by one injection of a potent toxoid, which is entirely safe and rarely causes the child any noticeable inconvenience. Some toxoids (alum precipitated) are now so highly purified and concentrated that one-half cubic centimeter is all that is required.

The school year is just beginning, and the informed consensus is to the effect that no child should be admitted to classes who is

not immunized against diphtheria, either naturally or artificially. The day will come, no doubt, when this idea will be put into general practice. Meantime, we feel that no physician is performing his full duty toward those of his patients who have children of school and pre-school age, until he has informed or reminded them, by word of mouth or in writing (a printed card or folder might be sufficient) of the dangers of this terrible child-killer, of the simple measures which will remove this menace, and of the fact that he is prepared to carry out these measures, at the home or in his office.

This cannot, in our opinion, be properly construed as "solicitation of patients", in the sense intended by the Code of Ethics, but should be classified as a proper service rendered to patients, who properly depend upon their physicians for warnings and information regarding health matters.

In order to be helpful to our readers, we have prepared a little 4-page folder, written by the editor, entitled "Danger Ahead! Protection Against Diphtheria." This is of a size to go into the ordinary business envelope and will prove a dignified and strictly ethical reminder to patients. These will be furnished at cost (50c per hundred, with an additional charge of 50c per hundred for imprinting a physician's name and address on the back if this is desired). A sample will be sent on request.

The present season is a propitious and appropriate one for performing this service, and we urge all our readers to give this matter serious consideration and to take some action upon it without delay.

The true healer must educate, as well as heal.—
GEOFFREY HODSON.

Official Remedies

THE word, pharmacopeia, is of Greek origin, and originally meant, "to make or prepare medicines," or "the art or business of preparing medicines." In that sense it was used in the early Greek writings; but as the title of a book dealing with this subject it goes back no further than the beginning of the sixteenth century.

The ancients had no books which can accurately be compared with our modern pharmacopeias, but from very early times there were volumes in Egypt, India, Greece, Rome, Arabia and Persia, which devoted a

good deal of space to the compounding of drugs.

In medieval Europe, the art of pharmacy reached its highest point in Italy, but a number of personal and local formularies were published, which had a more or less wide vogue. Under the modern definition ("A work, published by some recognized authority, for the purpose of securing uniformity in the kind, quality, strength and composition of the remedies used in the practice of medicine"), the first pharmacopeia in Europe was the "*Antidotarium Florentinum*," published in 1489.

Today, most, if not all, of the progressive countries have their own official pharmacopeias. The first one in the United States was published at Philadelphia in 1778, for the use of the Military Hospital at Lititz, Pennsylvania. The first official "Pharmacopeia of the United States" was published (in both Latin and English) in December, 1820, and since then has been revised, by a special Pharmacopeial Convention, every ten years. The revision of 1840 (published in 1842) dropped out the Latin version.

The necessity for an official pharmacopeia is beyond dispute or question, but "large bodies (such as Pharmacopeial Conventions and other groups of recognized or self-constituted 'authorities') move slowly," and their deliberate action has been wholly inadequate to keep pace with the tremendous rush of discovery and invention in the fields of chemistry and pharmacology, which had its inception about the beginning of the twentieth century. This fact has been recognized by the publication of such official or semi-official works as the "National Formulary" and "New and Non-official Remedies."

But even these newer and more flexible books are constantly more or less behind the march of laboratory and clinical research, partly because of the complex fabric of personal and political factors which enter into their compilation, and the physician who would confine himself strictly to the use of the drugs included in them, would, at times, find himself decidedly handicapped in caring for his patients.

Recently a rather active campaign is being carried on by various societies and semi-official bodies, to induce medical men to restrict themselves in the way just mentioned, and it may not be amiss to give a thought to the results which would follow if this campaign should prove fully successful.

The first and most important would be the

destruction of the great pharmaceutical manufacturing concerns, to whom we are indebted for the larger part of the remedies which have been added to our armamentarium during the past two or three decades. In this connection, it should be remembered that a considerable part of the laboratory and clinical research which is being conducted at our Universities is sponsored and financed by one or another of the leading pharmaceutical houses.

If this epoch-making work were cut off, who would carry it on? The large endowed research institutions are, as a rule, deeply involved in red tape and lack the incentive of personal reward which, at present, seems so important a factor in progress. The national and local associations of pharmacists, whose activities are, no doubt, worthy and worth while, have not, so far as we are aware, made any noteworthy contributions to the advancement of the science and art of medicine, nor do they seem likely to do so, since they appear to have no obvious and valid reason for such a course of action.

The proponents of the restriction of therapeutic efforts by the sole use of official remedies put forth specious arguments; but the thoughtful physician who will give serious consideration of the question as to just who would be benefited and who harmed by such restrictions, will be likely to find himself and his patients in the latter category.

Minds are like parachutes—they function only when open.—*Eclectic Med. Journ.*

Brotherhood and Equality

THOSE who have studied and practiced any of the great scientific and religious philosophies, have become convinced of the fundamental unity of all life, and therefore of the "brotherhood," not only of all human beings, but of everything that lives, including the lower animals, plants and even the minerals.

But neither "Brotherhood," nor any other word or phrase having strong emotional connotations, can make all manifestations of life (nor even all human lives) equal. In fact, inequalities of many sorts seem to be inherent in the nature of the manifested universe. Not even two grains of sand on the seashore are exactly equal and similar; how much less any two men!

If brotherhood is to have any realistic meaning, it must be considered purely as an intellectual and spiritual concept, because, obviously, not even all men are brothers, in any social sense. The sublime philosopher or

artist has no tie of brotherhood with the savage bushman, except in so far as they are both, after the flesh, members of the animal kingdom.

Much confusion of thought has arisen from confounding brotherhood with equality and from a misunderstanding of the command, "Love thy neighbor as thy self"; which does not say nor mean that we must love all men as we love our dear ones.

We show love for ourselves by ministering to our own physical, emotional and mental needs, so far as we are able; and all reasonably civilized persons are glad to do much for any human soul, and even for the animals and plants—thus manifesting a brotherly feeling toward them. Because one would not callously harm a toad or a snake, is no reason why one should take such a beast to bed with him. And because one would not refuse food to any man in need, no matter what his color, race or state of cleanliness (nor even to a hungry dog or cat), is no reason why one should bring the two-legged or four-legged recipient of such assistance to dine at one's table with the family.

Even blood-brothers—sons of the same father and mother—may be very unsatisfactory companions for each other, by reason of marked differences in ages, tastes or temperaments.

In view of these ideas, we may well continue to choose our intimates and more casual associates on the basis of compatibility of outlook, tastes and accomplishments, without any feeling that we must make a companion of every "brother" for whom we have an opportunity to perform a service, and remembering that any such forced and unnatural companionship would probably be as distasteful or distressing to our brother as it would be to us.

A Safe Living

YOUNG physicians, who are not yet fully established in a remunerative practice, who have a taste for travel and change and who are sufficiently well posted so that they would not fear a rigid and extensive professional examination, will do well to consider the Medical Corps of the Regular Army as a career.

When once commissioned in the Army, the income, while not munificent, is ample for a family of reasonable tastes to live comfortably, though not ostentatiously, when one considers that, in addition to the cash pay, living quarters, heat, light and various other perquisites are included. Moreover, this income is for life (unless one indulges in some scandalous behavior or grossly neglects one's duties), because at the age of sixty-four years or after

thirty years of service (on application) or in case of the development of physical disability, all officers are retired on three-quarters pay.

At the present time there are no vacancies in the regular Medical Corps, but it is estimated that there will be forty vacancies between now and July 1, 1936, so those who may be interested will be wise if they communicate, at once, with The Surgeon General, U. S. Army, Washington, D. C., and ascertain the full details regarding appointment.

There are probably similar opportunities in the U. S. Public Health Service and, if one is a constitutional bachelor, in the Navy. Information on these organizations is, no doubt, available from their respective Surgeon Generals.

NEXT MONTH

Dr. Frederick R. Greenbaum, of Philadelphia, will describe a new preparation for the injection treatment of varicose veins.

Dr. Frederick Damrau, of New York City, will tell how grape juice may be used to facilitate weight reduction.

Dr. W. Coda Martin, of New York City, will discuss the treatment of arthritis by stimulating the patient's resistance with a parenteral medicament.

COMING SOON

"Physical Rehabilitation of the Middle-aged," by Col. George A. Skinner, M. C., U. S. A. (Ret.), Omaha, Neb.

"How to Avoid Malpractice Suits," by I. S. Trostler, M.D., F.A.C.P., Chicago, Ill.

LEADING ARTICLES

Alcoholism

By Iwan I. Ostromislensky, M.D., Ph.D., New York City

SOONER or later chronic alcoholism produces the same complex metamorphosis in the addict as does morphinism. So far as the nervous system is concerned, there is not only similarity, but complete identity of reactions.

Symptoms

In either case the patients begin by suffering from severe insomnia, headache and complete loss of appetite. The endocrine glands, and especially the fermentative functions of the stomach and digestive tract, are depressed to the utmost. In either case, a tendency to periodic sweating has been observed, also nausea and vomiting in the morning and, among other things, the symptom of so-called goose flesh, which corresponds to bristling hair in the animal. Dermatographism is sharply increased and sometimes it is possible to trace a whole picture on the patient's skin by means of a little wooden stick. Furthermore, tremor of the head, the tongue and the hands, as well as of the fingers when the latter are slowly separated and again brought together, is a common symptom in both cases. A general tremor is observed also in morphine addicts. The tongue is coated.

Both morphine and alcohol addicts often complain of numbness in the tips of the fingers and toes. The coordination of movements is severely disturbed. I have observed, in one case of alcoholism, the characteristic symptom which is common also in morphine addicts: The patient was unable to stand still without swaying with closed eyes and lost balance almost instantaneously. As a rule the pulse is irregular in either case, the number of beats in a time unit fluctuating within an astoundingly wide range, and often varying within a short space of time. These fluctuations become very marked at the slightest movement made by the patients. Sometimes neuralgia and neuritis occur.

Morphine as well as alcohol addicts generally experience pain in the epigastrium and are sensitive to pressure in the region of the stomach.

The reaction of the pupils to light becomes very slow and at times the pupils become completely immobile.

The pharyngeal and tendon reflexes are

generally increased. However, in very severe cases of morphine or alcohol addiction, they may be decreased or even absent, in which cases there is atrophy of the corresponding muscles.

In either case the memory and the power of observation are weakened and attention is severely blunted. Both morphine and alcohol addicts gradually lose the power of concentration for any length of time and are apt to become fatigued very quickly; whereupon their perception of impressions from the external world takes on a superficial and somewhat diffused character. The patients avoid facing new problems.

In their everyday life such patients become intolerably untidy. Gradually and without noticing it, they lose all sense of responsibility and seem to forget all their duties. The feeling of shame becomes obliterated. At the same time they stop caring for or even taking an interest in their family. And yet, at this stage of the sickness, morphine and alcohol addicts are apt to cavil at and to be exigent to their nearest relatives. In the end they lose connection with their surroundings and then retire into their ego (become introverts). Among other things, many of them come into serious conflict with the law.

This characteristic moral deterioration of alcohol and morphine addicts develops progressively at the peak of the sickness, sometimes with remarkable rapidity.

In this comparison between the symptoms of morphinism and alcoholism, I have had in mind relatively severe cases. When the sickness has reached this form it is easily detected at the very first encounter with the patient; in fact, it is evident even to the uninitiated in medicine or biology. On the other hand, in its lighter forms, this disease seldom displays its symptoms and even close friends are not always able to detect them. In society such people are apt to be very popular, as being lively, brilliant and entertaining and pleasant companions. The moral deterioration along the lines described above may not become evident even within a period of 10 to 15 years.

This parallel, and in particular the identity of the severe nervous symptoms, even those causing the moral deterioration of the pa-

tients, renders permissible the assumption that therapeutic preparations alleviating the symptoms of morphine withdrawal from morphine addicts, will have analogous therapeutic properties also in alcoholism. The similarity of these two types of addiction, however, is far from being limited by their symptoms.

Imperative Need, Not Habit

The whole series of nervous and somatic symptoms in these patients, and in particular a sharp weakening of attentiveness and memory, loss of appetite, general emaciation, loss of weight, exhaustion, sometimes approaching a state of cachexia, prolonged insomnia, etc., have, in both cases, a functional character; they must be regarded, in both cases, as a result of *chronic intoxication*—by alcohol in one case and morphine in the other. Upon withdrawal of morphine or alcohol they disappear without any treatment. The withdrawal of a narcotic substance creates, in its turn, in both cases, still more acute symptoms of withdrawal. Both these forms of addiction, therefore, are determined, not by ordinary habit, but by the *imperative need* of the patient.

The similarity of these forms of addiction is also expressed in the ease and sometimes inevitability of the relapses. In both cases it suddenly occurs under the influence of the same provocative factors (acute psychic disturbance, excessive physical fatigue, etc.).

The pathologic base of alcoholism often lies in allergic diseases; especially alcoholism is often found as one of the symptoms of idiopathic epilepsy. Therefore it must be considered, in many instances, as an expression of idiosyncrasy; i.e., a certain form of hypersensitivity to various substances. This interesting observation establishes still deeper the connection between the phenomena of morphinism and alcoholism. I have already shown* that morphinism must be considered, in all probability, as an effect of an anaphylactic condition; i.e., a peculiar hypersensitivity of patients towards a certain autoantigen.

The analysis of the extensive literature on this problem and a careful study of the case histories of alcohol addicts described by various authors, inevitably lead to the following conclusions: Allergic diseases of parents produce a predisposition, in their offspring, to alcoholism and morphinism. I have found especially persuasive material in Dansauer and Rieth's pamphlet, "*Arbeit und Gesundheit*," Heft 18, Berlin 31; Langstein: Allbutt ("A System of Medicine," 1905) and elsewhere. Moreover, in collaboration with a number of physicians, I constantly found, in morphinists, various allergic diseases, chiefly various kinds of urticaria, including angioneurotic edema, allergic eczema and bronchial asthma. It may be asserted that almost every morphine

addict suffers from the so-called drug idiosyncrasy, as for instance to hyoscine, belladonna alkaloids, antipyrin, aspirin, adrenalin, barbitol and its homologues, various cathartics, etc. Usually this idiosyncrasy is manifested in angioneurotic edema, itching and various other skin phenomena. Allergic disorders are observed no less frequently in alcoholics and their parents, but especially often in the form of essential epilepsy and bronchial asthma.

Alcoholism and Epilepsy

A direct and close connection of the phenomenon of alcoholism with idiopathic epilepsy has been observed. It has been shown that dipsomania, the state of pathological drunkenness and even chronic alcoholism are not infrequently due to the epileptoid constitution of the parents. "Epilepsy, which is a nervous disease transmitted by heredity, is encountered among alcoholic addicts seventy times as frequently as in the general population" (see Torald Sollmann, "Manual of Pharmacology," p. 711, 1932).

The so-called alcoholic epilepsy has also been described in detail. It occurs only in the presence of chronic alcoholism. It can hardly be doubted that this variety of epilepsy belongs to the group of typical allergic diseases. It may even be considered as established that the atopen; i.e., the causative agent of this variety of epilepsy, is either alcohol *per se*, or substances present as admixtures in the alcoholic beverages used by the patient in question. This exceedingly interesting conclusion may be considered as proved, for complete abstinence of the patients from alcoholic beverages reliably checks attacks of alcoholic epilepsy, and vice versa; attacks which have been checked in this manner recur, as a rule, if the patients resume the use of alcoholic beverages.

Essential epilepsy is a chronic disease of the cerebrum, which is similar to every atopic disease hereditarily transmitted in the ascending line. Here we find a relatively rare case of a uniform pathologic heredity.

Intervals between two attacks of the epilepsy are just as much indeterminate as in other allergic diseases, for instance, in bronchial asthma. Often they appear every two or three weeks, sometimes every day and even several times during the day, but there are cases when the intervals extend for months and even for many years.

Not very long ago, physicians distinguished two basic forms of epilepsy: genuine or idiopathic, in which it was impossible to determine the real cause of the disease; and a symptomatic form whose various causes are easily diagnosed.

At the present time it may be considered established that genuine epilepsy belongs to one of the characteristic allergic diseases. It may be stated that the attacks of this disease,

*Med. Rec., pp. 556-560, June 19, 1935.

as the attacks of other allergic diseases—hay fever, bronchial asthma and eczema—are due to idiosyncrasy. The latest work on this subject has been presented by Forman (*Archiv. Neurol. and Psych.*, Chicago, 1934, V. 32, pp. 465-680—abstract in *J. A. M. A.*, Nov. 10, 1934, Vol. 103, p. 1,484). Incidentally, in Belyeat's book, he recites a history of a boy who began to suffer attacks of asthma at the age of two years. When he was seven years old, symptoms of epilepsy appeared, which have gradually grown more severe. The elimination of food to which he was (according to the scratch and intradermal tests) hypersensitive, automatically cleared up his attacks of epilepsy.

The Treatment of Withdrawal Symptoms in Alcoholism

The symptomatologic identity of the late, and especially the nervous, symptoms in alcoholism and morphinism; the similarity of symptoms of chronic intoxication in both cases; the character of both disorders, which develop, not as a vicious habit, but as an imperative need; the similar tendency to relapse occurring in both cases under the influence of the same favorable factors; the severe symptoms which develop in patients on the withdrawal of the narcotic (alcohol or morphine) to which they have become habituated; and finally the close resemblance, in many cases, in the pathologic foundations of the disease, suggest that morphinism and alcoholism may be considered, in a vast number of cases, as manifestations of various types of idiosyncrasy.

All these observations and facts testify directly to the deep similarity of the two disorders. Therefore, it could be expected that any therapeutic preparation which relieves certain stages of the disease in morphinism will likewise produce a favorable therapeutic effect in alcoholism also. Theoretically it was to be expected that, for instance, the symptoms of withdrawal of the narcotic, as well as symptoms of chronic intoxication, etc., will be cured in both cases by means of the same therapeutic preparation. This practically interesting conclusion, to which I have come as the result of an analysis of every stage of the disease, in both cases and in their various forms, has been already confirmed empirically by a number of prominent clinicians.

Wide clinical observations have shown that preparations which relieve the withdrawal symptoms in morphine addicts likewise possess therapeutic properties in alcoholism. As a matter of fact, the withdrawal of alcohol and that of morphine are now performed with the aid of the same therapeutic preparations. As a rule, the treatment of alcoholic addicts is more successful in such cases; i.e., it causes relatively less suffering to the patients.

In modern methods of treatment of morphine addicts, the withdrawal of morphine is

usually accomplished with the aid of alkaloids of the belladonna and the hyoscyamus groups; hyoscine (scopolamine) is used with particular frequency. The same preparations are widely used in the treatment of alcoholic addicts. In the fourth edition of his "Manual of Pharmacology," published in 1932, Torald Sollmann writes (p. 712): "Treatment of Chronic Alcoholism: This follows the same principles as with other drug habits. The first essential is the rapid withdrawal of the drug to final total abstinence. This may be facilitated by scopolamine (see under morphine habit). The prospects of cure are better than with morphine or cocaine; but the patient will often relapse."

Laughton Scott obtained fair results on the withdrawal of alcohol from the patients with the aid of a mixture of belladonna alkaloids. Parrott* using atropine, cured even alcohol addicts who had been drinking daily from three to four litres of vodka, a beverage containing 42 percent of alcohol.

Rossium and Allergic Diseases

Theoretically it should have been expected that Rossium (diphenylmethylpyrazolonyl) would prove to be a specific therapeutic preparation in certain allergic diseases. A preventive action of Rossium in cases of bronchial asthma was especially to be expected, for, as an anti-shock preparation, it prevents the death of sensitized guinea pigs, even on the reinjection of from two to three lethal doses of the antigen; yet the death of guinea pigs from anaphylactic shock is due to asphyxia resulting from a severe attack of bronchial asthma. At my request, Rossium was used by a number of physicians in a total of not less than 100 cases of bronchial asthma†. To my complete surprise, these observations showed that Rossium has no effect whatever in these diseases.

This negative, but theoretically very interesting, result may be explained by the supposition that, on oral administration of Rossium, its distribution in the human organism is quite different from that in animals. Apparently, in cases of bronchial asthma in man, Rossium either does not reach the shock organ of the patients; i.e., the bronchioles, or fails to accumulate there in sufficient quantity; or, finally, after reaching this organ it is eliminated from it at a relatively enormous rate of speed.

Rossium as a Neurotropic Preparation

Studying Rossium as an analgesic in cases of neuralgia and neuritis, I observed that this preparation, not only relieves pain, but frequently cures the patients. This astonishing result obtained in sciatica and in some cases

*B. Parrott: *Clinical Journal*, December 7, 1927.

†The doses, duration and period of time of administration of Rossium before the beginning of the attack were varied.

of neuritis and herpes zoster, proves directly that Rossium is a neurotropic preparation; being introduced into the human organism, it is selectively absorbed by the cells of the nervous system. Obviously it produces some changes in the nerve cells or in the media of the nerve stem and probably these changes determine its therapeutic effect.

Thus Rossium belongs to the group of the so-called neurotropic substances. On the basis of this fact it could be expected that this preparation will possess therapeutic properties in the allergic diseases in which the rôle of the shock organ is played by various nerve-tissue, or even the brain of the patient.

From the neurotropic properties of Rossium, one would expect, in the first place, a therapeutic effect of this preparation, in treatment of alcohol addicts, closely resembling the effect of so-called specific preparations. In any event, it was possible to predict that its action would not be limited to alleviation of the withdrawal symptoms of alcohol alone, but would assist in the reconstruction and mental regeneration of patients.

Clinical observations have completely confirmed this prediction: As a rule Rossium checks, in a very short time, all nervous symptoms of chronic intoxication and, in particular, severe paresthesia and neuritis. Moreover, the areas of anesthesia developed as a result of neuritis disappeared following the restoration of the functions of the nerve involved. This process usually takes from 25 to 40 days.

Conclusions

1.—The therapeutic action of Rossium (diphenylmethylpyrazolonyl), in the majority of cases of chronic alcoholism, has been demonstrated to be quickly effective. The normal nervous balance returns in a surprisingly short time. It materially reduces the period of physical trembling and mental as well as nervous craving, provided the patient is really sincere in his desire to get rid of his need or vicious habit.

2.—The beneficial therapeutic effect of Rossium has likewise been observed in delirium tremens and dipsomania.

15 E. 40th St.

Coseasonal Hay Fever Therapy

With Special Reference to Low Pollen Doses*

By Herbert J. Rinkel, M.D., Kansas City, Mo.

IN 1932, Vaughan¹ reported success in the treatment of hay fever with small coseasonal pollen doses. The pollen content of the air of Kansas City being much greater than that in Virginia, it seemed worthwhile to determine if the low coseasonal pollen doses were practical in this community. Therefore, this method was employed in the seasons of 1933 and 1934. The results are reported herewith, together with a discussion of the various factors entering into the successful application of low coseasonal pollen doses.

In using this plan of treatment, several pertinent facts have been observed which are of considerable importance in the treatment of hay fever, regardless of the size of the pollen dose used: *First*, patients sensitive to pollen only are easily and practically always relieved of their symptoms. This group makes up a small minority of the total number of hay fever patients. *Second*, in patients sensitive to hay-fever-producing allergens other than pollen, the results with pollen therapy will depend as much on the complete and successful treatment of these concomitant allergies as it does upon correct pollen doses. *Third*, the variation in symptoms day after

day and during the course of any one day, in the majority of instances, does not coincide with the pollen count of the air. *Fourth*, no patient who had received a dose of 400 units obtained better results by increasing the pollen dose (seasons 1933 and 1934). *Fifth*, in patients with accurate treatment of their complicating allergens, the results were better with the small pollen dose than it was with the maximum dose when certain of these secondary factors were ignored.

Any evaluation of the results in the treatment of seasonal hay fever should take into consideration the following factors: *First*, the pollen content of the air. This information can be obtained by referring to Chart I. *Second*, the extra-pollen sensitizations; these have been previously emphasized by Eymann², Gelfand³, Cohen and Rudolph⁴ and others. *Third*, the antigenic strength of the material used in treatment. Our material was prepared by the weight-volume method and was of similar strength to that used by Vaughan, except that three consecutive dilutions of 1:5 were made, instead of two 1:10 dilutions. Thus, 0.05 cc. of our 1:6,250 dilution contains 8 pollen units, whereas 0.05 cc. of Vaughan's¹ 1:5,000 dilution contains 10 units.

*Read at the St. Joseph Clinical Society Meeting, April 18, 1935.

CHART I

REPORT OF POLLENS FOUND ON ATMOSPHERIC SLIDES Richmond, Virginia, 1932—Kansas City, 1933-34						
DAY	AUGUST			SEPTEMBER		
	Richmond, Va. 1932	Kansas City, Missouri		Richmond, Va. 1932	Kansas City, Missouri	
		1933	1934		1933	1934
1	0	0	0	64	325	62
2	0	0	0	56	227	10
3	0	0	0	30	173	227
4	0	0	0	38	329	20
5	0	0	0	6	208	158
6	0	0	0	135	436	321
7	0	0	0	111	306	266
8	0	0	0	70	367	172
9	0	0	0	35	334	82
10	1	14	15	10	328	95
11	1	25	3	25	433	97
12	1	23	5	24	362	361
13	1	27	8	56	69	122
14	0	25	4	29	31	87
15	0	26	4	50	125	159
16	1	37	2	60	44	49
17	0	58	1	49	181	147
18	1	137	22	34	145	176
19	13	98	125	42	96	220
20	9	125	6	28	46	66
21	9	88	54	8	69	37
22	7	110	48	9	51	51
23	9	110	49	60	95	70
24	6	56	70	16	82	162
25	3	283	11	21	70	96
26	8	343	8	19	2	40
27	30	430	211	9	7	19
28	40	750	630	8	7	9
29	37	682	249	9	11	25
30	34	233	65	8	5	29
31	54	200	66			

The case histories reported herewith are of patients living in Kansas City and treated during the pollen seasons of 1933 and '34. Testing was done with all common foods, animal danders and dusts, as well as pollens of importance in this territory. There was a total of 281 food reactions, the least being 3 and the highest 34; animal dander reactions varied from 1 to 11, with an average of 7 using 19 different dander extracts. Pollen reactions were obtained in all cases, varying between 8 in the least sensitive and 28 in the most sensitive; the general average of reactions being 14.

To illustrate the points made in the preceding paragraphs, a number of case histories will be presented in detail.

Case Histories

Case No. 1:—Male, aged 46, subject to hay fever from August until frost for several years. There were skin reactions to 3 foods, 7 animal danders and 15 different pollens.

Injections were started, with 8 units of grass and ragweed, August 1 and increased as required to obtain relief for 48 to 72 hours until August 24, when 400 units were found sufficient to relieve the patient for five days. This dose was repeated on August 29 and September 2, 5 and 7, with satisfactory results. Following the dose of September 7 he did not return for 12 days, having been comfortable during this period; at that time his dose was increased to 480 units. He returned in four days because of a recurrence of symptoms, at which time the same size dose was repeated. He returned again in five days,

when it was necessary to increase the dose to 600 units. The patient estimated that the treatment afforded him better than 90 percent relief in symptoms.

In the season of 1934, treatment was started on May 15, and on August 22 he was receiving 2,000 units, being approximately 4 times the highest dose of the previous year. He continued through the season with this dose and with results equal, but not superior to, those of the past year.

Case No. 2:—B. C., aged 18, subject to fall hay fever and asthma the past 13 years. Previous treatment with high pollen doses being ineffective, he discontinued treatment and presented himself for study on September 14, 1934. Testing indicated the necessity for ragweed, pigweed and grass pollen. It was determined that wheat, egg and milk were secondary factors as a cause of hay fever and asthma and they were eliminated. His pollen extracts were started at 8 units and increased approximately 33 percent each day until he was receiving 40 units of each extract. At that time the patient had obtained better than 95 percent relief of his hay fever and complete relief from asthma. This benefit was maintained with this same dose throughout the season. The foods were replaced after frost without recurrence of symptoms.

Case No. 3:—Miss W. H., aged 31, subject to fall hay fever 12 years. There were 31 food, 8 animal dander and 20 pollen reactions. The patient was first seen on August 21, 1934. Treatment with ragweed, grass and pigweed pollen was necessary. In view of the adequacy of low pollen doses, this patient's pigweed and grass extracts were mixed and administered as a single product. Treatment was given on Aug. 25, 12 units; 27, 16 units; 29, 24 units; and 30, 40 units. Relief was obtained on the small doses for two days; in fact, skin testing relieved her for two days.

During September treatment was given on the 1st, 4th, 6th, 7th, 8th, 10th and 14th, the last dose being 200 units. The patient was well protected, having better than 60 percent relief from the first day, and continued from September 10 until frost with adequate relief, using 200 units every 5 days.

Case No. 4:—Female, aged 5, seasonal hay fever for two years. Treatment was started with 8 units of ragweed, repeated and increased at 24- to 48-hour intervals, as needed. There was satisfactory relief when she was taking 16 units. Analysis of her daily variation of symptoms indicated that there was an increase of hay fever after the ingestion of wheat. It was eliminated and thereafter 40 units of ragweed extract continued to give relief. Wheat was replaced in the diet after frost, without symptoms.

Case No. 5:—Mr. A. M. P., male, aged 26, seen on August 31, 1933. He was given 8 units each of ragweed, grass and pigweed extract. His asthma was practically relieved within 72 hours, with the dose being increased to 16 units. His hay fever was definitely improved. This dose was then gradually increased to 200 units. His daily variation of symptoms indicated a food factor and upon elimination of several foods there was complete control

of his asthma throughout the season and better than 90 percent relief of his hay fever. The foods eliminated were replaced without difficulty after frost.

During the 1934 season the patient was taking 4,000 units at weekly intervals, but it was again necessary to eliminate the foods which complicated treatment in 1933. Thereafter, results equalled those of the first year. It is worthy of comment that this ragweed-sensitive patient could not be relieved by pollen injections of doses amounting to 4,000 units any better than with those of 200 units, except when all of the extra-pollen factors were successfully treated.

Case No. 6:—Miss F. P., aged 34, was seen for fall hay fever of seven years' duration. She was skin-sensitive to 31 foods, 8 animal danders and 8 pollens. In her case a daily food and symptom record was kept for the entire season and these records indicate that the variation of her symptoms did not correspond with the pollen content of the air, as much as it did with specific articles in her diet, particularly egg, tomatoes and many fruits. It was observed that the patient had a greater degree of relief during September when she followed her diet closely than during the early part of the pollen season.

The exacerbations she had during this period were specifically related to the taking of egg and other foods previously found to increase her hay fever. Figure 1 indicates the relation between the pollen content of the air (Graph line I); the daily ingestion of the hay-fever-producing foods (Graph line II); the symptoms experienced by the patient (Graph line III); and symptoms occurring within two hours after ingestion of foods which were known to produce hay fever (Graph line IV).

Symptoms were well controlled, when she observed her dietary instructions, with a dose of 400 units during height of the pollen season.

Case No. 7:—Female, aged 32, hay fever and asthma from July to frost for 9 years. This patient was first seen July 25, 1933, suffering with seasonal hay fever and asthma. This was relieved in 48 hours by administering 8 units of grass and ragweed extract the first day and 12 units the following day. This was followed by 16 units the succeeding day and it was adequate for 48 hours of relief. One night asthma occurred about 3 A.M., due to eating fish, and upon its elimination she continued through the season entirely free of asthma and with better than 85 percent relief of hay fever.

Treatment was continued perennially, the foods denied were readmitted to the diet and during the season of 1934 she was free until August 22. It was found at that time that oats, rice and potatoes were the cause of symptoms. These foods were eliminated, in addition to wheat, which had previously been denied her. The patient experienced immediate and complete relief from asthma during the rest of the season. In her case it is again noted that a pollen dose in 1934 approximately 20 times that of 1933 was not sufficient to relieve symptoms as long as foods, to which she was sensitive, remained in her diet.

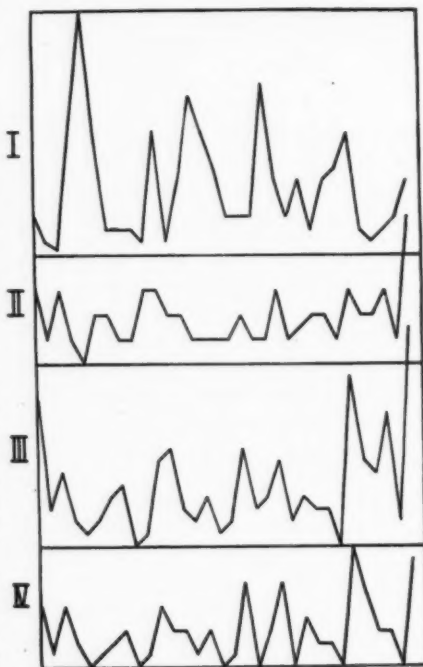


Fig. 1.—Graphic Comparison of Pollen Content of the Air, Ingestion of Foods and Symptoms in Seasonal Hay Fever.

Graph line No. I represents the daily variation in the pollen content of the air. Each unit of space above the base line represents 25 pollen granules.

Graph line No. II represents the daily ingestion of foods to which the patient was allergic. Each two units of space above the base line represent one serving of an allergenic food.

Graph line No. III represents the symptoms experienced, as recorded by the patient on the daily diet and symptom records. Each unit of space represents either one sneeze, or watering of the nose requiring wiping.

Graph line No. IV represents the symptoms, evaluated the same as in graph line No. III, which occurred within two hours of the meals.

These graphs are based upon the patient's own interpretation of her symptoms during a period of one month and are presented upon that basis.

Discussion

It will be seen that all of the patients obtained relief with what is commonly regarded as a small, though not necessarily minute, dose of pollen extract. In every case where the extra-pollen factors were successfully taken care of at the start, relief with the small dose of 8 to 16 units was immediate and usually lasted from 24 to 36 or even 48 hours. In practically all cases it was necessary to advance this dose gradually, as the patient apparently built a tolerance to the initial minute dose. It is significant that there was no instance of failure with a pollen dose of 400 units, in which subsequent improvement occurred with no change in therapy other than to increase the size of the pollen dose.

The experience gained during the two seasons in this community leads to the observation that, if any patient is taking 400 units of the correct pollen extract and is not adequately relieved, one should look elsewhere for the cause of failure than in the pollen dose. If a patient has a systemic reaction with a small pollen dose, one should consider secondary sensitizations, particularly foods.

Our results, in general, substantiate the work of Vaughan, and I believe that his own case records corroborate the emphasis placed upon the extra-pollen factors in this paper. While an accurate comparison is not possible, it is of interest to note that the total ragweed count during the first ten days of September, 1932, in Richmond, was 555 and in Kansas City, 1934, it was 1,413. During this same period of time 4 of Vaughan's patients required an average of 110 pollen units for satisfactory relief and 4 of the patients reported herewith averaged 300 units each. In each case there is an approximate ratio of one to five between the pollen units required and the total pollen count over a ten-day period.

One should, however, bear in mind the low total pollen counts of the seasons 1933 and 1934. A correspondingly larger pollen dose may be necessary in subsequent seasons with a return to higher pollen counts. The important point is the apparent ratio between the necessary pollen dose and the amount of pollen in the air.

The efficacy of the low pollen dose and the fact that the majority of patients are skin-sensitive to a fairly large number of hay-fever-producing pollens, has suggested that better results might be obtained in treatment if extracts were compounded in such a manner that a patient would receive adequate

protection to all hay-fever-producing pollens in his community, to which he is definitely skin-sensitive. This was tried in case No. 3, with very satisfactory results. It would seem to be a better plan of treatment to do this rather than to give an extremely high dose with one or two of the more important pollen groups. This viewpoint is substantiated by the fact that little if any improvement was noted by increasing the pollen dose above 400 units.

The frequency with which one encounters food as a complicating factor in seasonal hay fever warrants the determination of the efficacy of the prescribed diet, in conjunction with specific pollen therapy. One of the cases reported herewith (Case No. 2) was treated in this manner. In this case we were able to make leukopenic studies of the food factors both in and out of season, and it appears possible that this additional diagnostic measure may be used in determining the correct diet*.

The experience reported here again emphasizes the multiplicity of factors entering into the successful treatment of seasonal hay fever and indicates that it is a complex disease, which, if it is to be successfully treated, must first be accurately diagnosed.

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Argyle Bldg.

*This case is being more fully presented elsewhere.

NATURAL AND "SUPERNATURAL"

For more than three centuries the supernatural has been excluded from scientific recognition of any kind. . . . In the present age . . . there is no excuse for this hostility. . . . The conception of the "natural" has so changed that it either includes all that had formerly been denominated by the "supernatural" or it does not prevent the "supernatural" from existing alongside of it. The antithesis between the two ideas has changed from age to age. . . . one term has altered its import as much as the other. The first meaning of the term "natural" was the physical. This served to define the "supernatural" as the spiritual. . . . The distinction today between the "natural" and the "supernatural" no longer has any controversial value. We have only proved that spirit exists as a fact, or that we have facts which will not permit any other explanation of them than the fact of their existence, and you may call them either "natural" or "supernatural," physical or spiritual. . . . It is a question of fact and evidence, and not of preserving the usage of terms that have wholly outlived their usefulness.

The chief hostility of the academic man today against psychic research is based upon his dislike of the vulgarity of spiritua listic performances and the triviality of its incidents. . . . Good taste will no more save a decaying creed than vulgarity will destroy a true one.—JAMES H. HYSLOP.

Notes from the American and Canadian Medical Association Meeting

Reported by George B. Lake, M.D., Waukegan, Ill.

THE physicians of the United States and Canada, meeting in joint convention at Atlantic City, New Jersey, in June (the 86th annual session of the A. M. A. and the 66th of the C. M. A.), were greeted by a downpour of 5,000,000 tons of rain; but the skies cleared next day and the rest of the week the weather was lovely, so that the famous Boardwalk and



A section of the famous Boardwalk, with shops and hotels at the left and the beach at the right.

the beach were almost as popular as the gigantic convention hall.

It was, truly, a notable meeting. The registration (8,294 physicians) was, I believe, a record. The scientific and commercial exhibitions were unusually large and instructive; there were 63 educational moving pictures in operation most of the time. The impressive, life-size colored sculpture, "The Doctor," which was shown by the Petrolagar people at the Century of Progress Exposition in Chicago was on exhibition at this session and was seen by thousands.

One of the pleasing features, especially so near to the first anniversary of the famous Dionne quintuplets, was the presence of the equally famous accoucheur and medical adviser, Dr. Allen Roy Dafeo, whose short, stocky person was all about the place, so that hundreds of the doctors present had an opportunity to shake his hand.

The scientific lecture sessions (most of them, at least) were run on the same careless and exasperating plan as usual, many speakers being permitted to overrun their time, so that those who wished to hear papers in several sessions had no idea when the lectures they were interested in would be delivered.

The House of Delegates

The meetings of the House of Delegates were more lively and of greater interest than usual. Probably their most important action was the official appointment of a committee

to investigate birth control methods and report at next year's meeting. For four years, efforts have been made to obtain this action, but the House has sidestepped it. This year, the pressure from State delegations and from many other outside organizations and individuals became so impressive that it seemed advisable to accept this duty. This matter was of such general and vital interest that the *Literary Digest* for June 22, 1935, devoted more than two columns of its space to a discussion of it, as part of a fine general report of the meeting.

The expected condemnation of State Medicine was forthcoming, especially and specifically President Roosevelt's "Social Security



The great Municipal Auditorium, where the meeting was held, with the beach in the foreground.

Bill," and, in general, all forms of state and federal compulsory sickness insurance. The idea of voluntary community plans for this type of insurance met with a good deal of favor.

So in earnest were the delegates about this compulsory insurance matter, that they jolted loose Dr. F. C. Warnshuis, who has been speaker of the House of Delegates for thirteen years, ostensibly because he is now secretary of the California State Medical Association, which has indorsed this form of politicalized medical service. His successor in the Speaker's chair is Dr. Nathan B. Van Etten, of the Bronx.

Dr. James S. McLester, of Birmingham, Ala., (see *CLIN. MED. & SURG.*, Sept., 1934, page 405), was installed as President of the A. M. A., and Dr. Jonathan C. Meakins, of Montreal (see "*C. M. & S.*," June, 1934, p. 251), as President of the C. M. A. Dr. James Tate Mason, of Seattle, Washington, whom we take pleasure in introducing to our readers in the editorial section, was chosen as President-elect. Next year's meeting is to be held at Kansas City, Mo.

The Scientific Exhibits

For a number of years, the scientific ex-

hibits at these meetings have been steadily more and more instructive, so that now it would be well worth the while of any progressive physician to attend these meetings, if they consisted of nothing more than this exhibit. One could spend the entire week in studying these instructive presentations, and go away with the equivalent of a month of graduate study elsewhere. Many of the exhibits must have been very costly, and where they were prepared at the personal expense of the exhibitors, must have represented, in some instances, a real sacrifice.

Again I want to stress the thought that, if all, or even a considerable part, of this remarkable exhibition could be set up in a railway car or cars and transported about the country, so that the less keen and solvent physicians could study it without any considerable outlay of time, money or effort, the general standard of medical practice might be considerably raised. This is a matter which might well be discussed at county and state medical meetings and impressed upon the delegates, for possible consideration at the next meeting.

The gold medal in Class I (original research) was awarded to Drs. F. L. Adair and M. E. Davis, of the University of Chicago, for the discovery of the specific alkaloid of ergot and its isolation in pure, crystalline form. This alkaloid, which is known as *ergotocin* seems to possess all the useful therapeutic properties of ergot, and is much more potent than any other preparation of this drug heretofore developed. It will shortly be generally available commercially.

The silver medal went to Drs. L. G. Rountree, J. H. Clark and Arthur Steinberg, of the Philadelphia Institute of Medical Research, and Dr. A. M. Hanson, of Faribault, Minn., for original investigations of the biologic effects of thymus and pineal extracts.

This was one of the most impressive exhibits at the meeting and was thronged with interested people all the time. Here was shown, not only by charts and pictures, but also by the presence of some of the actual white rats upon which the experiments were made, that by feeding thymus extracts to several generations of these rodents, it is possible to speed up their development to an almost unbelievable degree. Thymus-fed rats of the ninth and tenth generations are as mature, in every way, four or five days after birth, as are the control animals after an equal or greater number of weeks. Fig. 1, reproduced by permission of the authors from J. A. M. A. for Nov. 10, 1934, shows the striking contrast in appearance of a test rat of the fourth generation with a control animal. In rats of the tenth generation, shown at the meeting, the difference was decidedly more marked. It is feared that the experiments cannot be carried further, because the in-



Fig. 1.—Left: Thymus-fed rat of the fourth generation, 6 days old (the eyes are open). Right: Control rat, 7 days old.

tra-uterine development of the thymus-fed animals is so rapid that the mothers cannot give birth to their offspring.

The animals fed with pineal extracts matured rapidly, but did not grow in size—they were *precocious dwarfs*.

In Class II (excellence of presentation) the gold medal was given to Drs. Stuart Harrington and Willis S. Lemon, of the Mayo Foundation, for a set of remarkable life-size and naturally colored models showing the clinical manifestations and surgical treatment of various types of diaphragmatic hernia and intrathoracic tumors. This held special interest in view of the rather feverish newspaper publicity which has recently been given to children treated for "Upside-down stomachs," which are, of course, nothing but diaphragmatic hernias.

The silver medal went to Drs. D. W. MacKenzie, and A. B. Wallace, of the Royal Victoria Hospital, Montreal, for an exhibit on lymphatic studies, especially the relation of the lower urinary and genital tracts to kidney infections.

Among the non-medal-winning exhibits were several which, while not so showy and, perhaps, not so valuable from a teaching standpoint, seemed to present basically new ideas of potentially large importance.

Among these was a demonstration (which received a Certificate of Merit in Class I), by Drs. Kanter, Bauer and Klawans, of Rush Medical College, Chicago, of a new and apparently simplified biologic test for pregnancy, using, not rabbits, but small fish—Japanese bitterlings; the presentation, by Drs. Florsdorf and Mudd, of the University of Pennsylvania, of a method for preserving serums and other biologicals by desiccation in vacuo from a frozen state; an exhibit, by Drs. Felsen and Osofsky, of the Bronx Hospital, New York, to show that so-called "primary peritonitis" is really a hematogenous infection arising from a primary focus in the throat; a presentation of the new Gastrophotor, for taking

pictures of the interior of the stomach more and more effectively; a modest, but highly instructive and well-organized demonstration of the mechanism, relations and clinical features of hyperinsulinism, prepared and helpfully presented by Dr. Seale Harris, of Birmingham, Ala. The principal factor in the non-surgical treatment of this important clinical condition seems to be a high-fat and low-carbohydrate diet, continued for a long time. Incidentally, a moderately-priced micro-



Courtesy, Blair & Curtis.

Fig. 2:—An operating team wearing Maskon.

colorimeter, for the simple and rapid estimation of blood sugar (an important procedure in these cases), was shown.

One must stop somewhere, because a discussion of all the interesting and valuable features of this exhibit would fill a good-sized book.

The Commercial Exhibit

The view from a balcony at one end of the great auditorium, with the entire commercial exhibit spread out on one huge floor, was a colorful and impressive sight. It would have taken one man, working ten hours a day, at least a month to see all the worthwhile things which were being shown by the 220 commercial exhibitors. Since only a small fraction of that time was at my disposal, I tried to see those things that would be of the greatest interest and practical value to the greatest number of our readers. I shall mention just a few of the newest of these, as space and time are important considerations here.

In my opinion, the biggest little thing shown at this meeting was Maskon (see Fig. 2)—a feather-light, transparent, germ-proof mask, which can be worn all day long without discomfort of any kind, not only to protect the surgical or medical patient from droplet infection during operations or examinations, but also to protect the physician or nurse when working over patients with diphtheria or res-

piratory or droplet borne diseases of any kind. The nurse can also wear it when handling young children, or the mother when nursing her infant. In fact, the range of usefulness of this simple little contrivance is astonishingly wide.

The flexible rim at the top and the earpieces (women use cotton tapes), which hold it in position and eliminate all pressure on the face, are made of aluminum, while the mask itself is fabricated of a strong, non-combustible Du Pont product called plastacele. The whole ingenious apparatus is so inexpensive and durable that, over a period of a year in a hospital, it ought to be as cheap as gauze masks, or even cheaper.

Intravenous infusions are growing so rapidly in popularity that three or four firms showed large ampules or flask-like containers, holding 500 or 1,000 cc. of the most widely used solutions employed for this purpose, with all the apparatus necessary to enable the family physician to give these infusions safely in the homes of his patients.

The taking of blood specimens for laboratory examinations has seemed so complex a procedure that many doctors have failed to employ these valuable diagnostic aids. With the Sheppard blood-taking tube, such specimens can be collected with ease by anyone who can successfully puncture a vein with a needle.

A new and highly practical surgical knife, with strong, interchangeable blades of all types, possessing several advantages over the types now in use, sells at a very reasonable price for both handles and blades.

The new stethograph, shown by the Cambridge Instrument Company, for amplifying and photographically recording the heart sounds, attracted a good deal of attention. It is simple in operation and the records produced are said to be uniformly satisfactory. Their amplifying stethoscope should be a boon to physicians with more or less defective hearing.

Squibb showed a new glandular product containing the growth, thyrotropic and sex complementary factors of the anterior pituitary; also a delicately adjusted solution of thyroxin for ophthalmic use in cases of ocular hypertension, floating vitreous opacities and rheumatism of the ciliary body.

The Abbott Laboratories put on an interesting and instructive demonstration of the action and uses of the vitamins; and the Vitex Laboratories showed a vitamin D concentrate, extracted from cod-liver oil, for use in fortifying commercial milk supplies.

In the Hoffman-La Roche booth, in a specially built glass cabinet illuminated by non-actinic amber light, was exhibited a vial containing 4 grams of the first vitamin B₂ ever prepared synthetically. The value of the contents of this insignificant-looking little tube

is estimated at \$10,000. As yet, no commercial use can be made of this interesting achievement in synthetic chemistry.

Here follow abstracts of a few of the more practical clinical papers and lectures:

DIET IN THE TREATMENT OF DISEASE

By Louis H. Newburgh, M.D.,
Ann Arbor, Mich.

Recent discoveries in chemistry and physiology have given us a new basis for thinking about food in disease. All diet therapy now can and must be based on fundamental principles. The haphazard, guesswork diet is a thing of the past.

Instead of being like a machine, as some superficial thinkers have represented it, the human body is fundamentally *different*. It is regulated *from within*, and its *structure* is injured if the things put into it (the diet) are deficient or excessive.

We now know something about the optimum dietary requirements of a normal adult, but the diet of the infant is a much more complicated problem, because it must include the factor of feeding for *growth*. The pregnant woman's diet is a special problem. If it is deficient in calcium, the infant is liable to be rachitic.

Dietaries based upon the careless elimination of various foods are always wrong in principle. We must first learn something about the optimum requirements of a normal adult, then study the influences of disease, and give a diet based on this knowledge. Those who omit milk in a case of juvenile diabetes, because it contains sugar, deprive the patient of his chief source of calcium.

Water is an important part of the diet. It is excreted by the skin, bowels and lungs, as well as by the kidneys. The urine for 24 hours averages from 900 to 1,400 cc.; while a man working in dry air at a temperature of 100°F., may excrete 10,000 cc. of water in a day through his skin.

The *minimum* water requirement for an adult is 1,500 cc. a day. If the kidneys excrete from 500 to 1,500 cc. a day, and the *total* excretion is 2,500 cc., this minimum allowance is obviously insufficient. The restriction of water in nephritis, with the idea of minimizing edema, may be dangerous. Even damaged kidneys will usually excrete water well.

If it is impracticable to give sufficient water by mouth, it must be introduced parenterally, and we must *give enough to do the work* by replacing all losses of water from the body; if not, dangerous dehydration may ensue.

Man is an integral part of the universe and must obey its laws. The food taken into the body must be oxidized by energy expended, or obesity will result—and obesity is *always* due to overeating; that is, to eating in excess of the energy output. Any overweight patient

can reduce if he will follow a truly intelligent dietary regime; but only *rational* dietetics is of any value.

ARTIFICIAL PNEUMOTHORAX IN LOBAR PNEUMONIA

By Drs. F. G. Blake, M. E. Howard and
W. S. Hull, New Haven, Conn.

Careful observation of the effects produced by artificial pneumothorax in 40 cases of lobar pneumonia suggests that it is of value only when performed within forty hours of the first symptoms, though some cases may be helped after as long as sixty hours.

To be effective, the diseased lobe must be completely collapsed by raising the intrapleural pressure to that of the atmosphere, with the patient lying on his sound side. Old adhesions may interfere with or prevent this effective collapse.

If artificial pneumothorax is to do any good in lobar pneumonia, we must look upon this disease as a pressing emergency calling for immediate action.

CYCLOPROPANE ANESTHESIA IN OBSTETRICS

By Ralph T. Knight, M.D.,
Minneapolis, Minn.

Cyclopropane has a sweetish, pleasant odor and is not irritating unless given in excess doses. One or two inhalations will produce analgesia for each pain; but it is powerful enough to produce complete anesthesia, even when given with a high percentage of oxygen, so that neither mother nor child is in danger of asphyxiation.

Even in deep anesthesia, the uterine contractions are not interfered with, and such anesthesia does not cause vasomotor shock, though it produces complete relaxation of the voluntary muscles and thus facilitates delivery. In cesarean operations the bowels are found contracted.

During cyclopropane anesthesia the skin and muscles may bleed slightly more than when other anesthetics are used, but there is no more bleeding from the uterus.

Although, like most volatile anesthetics, cyclopropane is inflammable, no reports of explosions in its use have yet appeared.

VENTRICULOGRAPHY WITH COLLOIDAL THORIUM DIOXIDE

By Walter Freeman, M.D., F.A.C.P.,
and associates, Washington, D. C.

Hitherto, the most satisfactory way of visualizing the ventricles of the brain to locate suspected tumors, has been by injecting air into the ventricles and making roentgenograms.

In colloidal thorium dioxide we now seem to have a more satisfactory substance for this purpose. It mixes readily with the cerebrospinal fluid; is relatively non-irritating; is

opaque to x-rays, giving a sharp picture of the ventricles; does not disturb the normal pressure relationships in the brain; and in normal patients is eliminated in about two hours. Some of the roentgenograms made with this substance have shown structures which have probably never been photographed before.

In most cases it causes a mild meningeal reaction, with an increase in the large mononuclears, but this reaction is often less than that which occurs after pneumoencephalography.

However, thorium is a radioactive substance, and the possible danger from its retention and storage in the body has not yet been determined. In cases where there are obstructions to the free circulation of the brain fluids, it is possible that the chemical might settle in some pocket and cause inflammation.

We have used this method in 20 cases without any disastrous results; nor has any damage to the brain been observed in patients examined subsequently to autopsy. We believe that, for ventriculography, colloidal thorium dioxide is superior to air.

TRIBROM-ETHANOL ANESTHESIA

By Sir Francis Shipway, London, Eng.

Solid tribrom-ethanol, used as a general anesthetic, has proved decidedly dangerous; but of 1,555 patients on whom tribrom-ethanol in amylene hydrate was used as a basal narcotic, none died.

The basal dose of this drug is 0.1 Gm. per kilogram of body weight, but this dose must be varied intelligently, in order to meet the conditions in individual cases.

Morphine has frequently been given along with tribrom-ethanol, but if no attempt is made to produce complete anesthesia with it, the drug alone serves the purpose and morphine had better not be used. The best anesthetic with which to follow it up is nitrous oxide and oxygen.

The chief danger from the use of this preparation is respiratory depression; but so far no death has been caused by tribrom-ethanol in amylene hydrate, nor have there been any fatalities from postoperative pulmonary complications.

THE TREATMENT OF MORPHINE ADDICTION

By Theophil Klingman, M.D., Ann Arbor, Mich., and William H. Everts, M.D., New York City

A normal person rarely or never becomes a drug addict, and those who do fall into addiction may be grouped into three classes:

Organic: Those who have been given morphine to relieve specific organic pain, and continue to take it for that purpose. These people derive no pleasure from the drug, other than relief from pain, and if the pain

is relieved otherwise they can stop taking it without difficulty.

Psychotic (rare): These individuals are depressed and take morphine, as others take alcohol, to relieve the depression. If it can be relieved by other means, it is easy for them to stop taking the drug.

Psychic Inferiors: These patients turn to morphine as a prop and to enable them to escape from the pressure of their environment and appear like normal persons. The more inferior they are, the harder it is for them to be relieved from the habit. In the milder cases, a cure is not unduly difficult.

The symptoms of morphine withdrawal are very distressing, if no special treatment is given. The drugs we use are not new, but the method is. We explain to the patient what we are going to do and stop the drug entirely and at once.

After opening the bowels freely with a saline laxative, we give 1/100 grain (0.65 mg.) of scopolamine hydrobromide, hypodermically, and follow this by twenty doses of 1/200 grain (0.325 mg.) of the same drug, given in the same manner every two hours. After this we give five hypodermic doses of 1/4 grain (8.0 mg.) of pilocarpine, at two-hour intervals. The patient relaxes, sweats freely, and comes out in excellent condition, with no memory of what happened while he was under the influence of the scopolamine.

By this method, relief from the habit is obtained in 55 percent of cases. The chief contraindication is cardiovascular disease.

Discussion

By Edwin G. Zabriskie, M.D., New York City

My personal experience with scopolamine or hyoscine leads me to feel that the doses recommended may be decidedly dangerous. I have seen patients in wild delirium from smaller doses than those given by Dr. Klingman.

I have recently had some pleasing experience with a new drug called Rossium, a derivative of pyrazolonyl, in the treatment of morphine addiction. This drug is administered on the theory that morphine has profound effects on the autonomic nervous system and that addiction may be classified as an allergic phenomenon.

Each morphinist appears to have a required minimum of the drug, to which his dose may be reduced without serious discomfort; but as soon as the dose is still further lowered, serious withdrawal symptoms appear, in the nature of anaphylactic shock. Rossium overcomes these allergic effects and carries the patient through the withdrawal period safely and in comfort, avoiding the very definite dangers of hyoscine. The clinical statistics of the Metropolitan Hospital, in New York City, show a gratifying number of "cures" by this method.

SAFETY IN THE USE OF ANESTHETICS

By John S. Lundy, M.D., Rochester, Minn.

In the clinical use of anesthetics by inexperienced persons, the factor of chief importance is *safety*.

Barbiturates. Any physician is warranted in using the soluble barbiturates, for analgesia and control of convulsions, in cases of tetanus, eclampsia or meningitis. In these cases, the selected drug should be given intravenously, in relatively large doses, and slowly enough not to depress the respiration. The stomach should be empty and the air passages kept clear at all times.

These drugs may also be given by any physician, by mouth and in relatively small doses, as preanesthetic medication. It should be remembered that, in psychically unstable individuals, the barbiturates are habit-forming.

Intravenous anesthesia should be given only by experienced persons and for short operations, except when no other anesthetic is available or safe for use.

Cyclopropane, the newest volatile anesthetic, is now considered safe only in the hands of experienced persons. It is inflammable and its effect on the heart has not been fully determined, so great caution must be used. As far as the fire hazard is concerned, it is safer than acetylene.

Ethylene may now be given, with reasonable safety, by those who are only moderately experienced, if the fire hazard is fully eliminated, but **diethylene** is probably safer and may be given by the drop method.

Oil and ether, by rectum, should be administered, for *complete anesthesia*, only by experienced persons. As a basic anesthetic or analgesic in obstetrics, it is safe in the hands of the inexperienced.

Chloroform is safe only in the hands of experienced anesthetists. In obstetrics it should be given carefully, with plenty of air. Avoid combinations, such as the old "A. C. E." (alcohol, chloroform and ether) mixture.

Ethyl Chloride, for local anesthesia by freezing, may be used by anyone; but as a

general anesthetic only by the experienced, except to begin an anesthesia, and then by the open drop method.

Regional anesthesia requires at least moderate experience, and should be more widely learned. A 1-percent solution of procaine is safest for this purpose; when the needle is introduced, the plunger of the syringe should always be drawn back, to make sure that the needle is not in a vein; make the injection *slowly*; give a barbiturate, by mouth, before starting the anesthesia.

Local anesthesia, using dilute procaine solution with 1:250,000 epinephrin, may safely be used by all physicians, if they will take care to be sure that they have the right drug and concentration and a sharp needle, and will then make as few punctures as possible for the desired effect.

Spinal anesthesia is safe only in the hands of those who are fully experienced, and even these must be careful to use moderate doses of the anesthetic. This method is never safe for patients who are anemic or dehydrated, and it should not be combined with ether anesthesia if this is avoidable.

Morphine may be given, intravenously, as an emergency anesthetic or in cases of severe pain. It is frequently used (generally hypodermically) before giving ether and oil by rectum, with ether by the open drop method, and with the barbiturates.

Magnesium Sulphate is a safe anesthetic only in the hands of experienced persons. Only the ready-prepared ampules should be used, and even then abscesses sometimes occur.

If there is the slightest suspicion that a patient has an idiosyncrasy to an anesthetic, a test (preferably a skin test) should be made before using it.

Those wholly inexperienced in the use of anesthetics should see several *practical demonstrations* before attempting to give them; and the occasional user will do well to refresh his memory and brush up his technic in this way, from time to time.

ANOTHER KINGDOM TO CONQUER

We must realize that man, the highest form of the evolutionary urge, comprises in one organism four kingdoms, the mineral, vegetable, animal and human. There is still one more for man to attain to, namely the spiritual, and although this last kingdom is beyond the limits of our sense organs, it too, must be considered in its proper place ere our mastery over progressive degenerative disease is attained.—WALTER BRYANT GUY, M.D., in "Hydrochloric Acid and Mineral Therapy."

Colonic Fermentation

An Etiologic Factor in Chronic Disease

By D. C. Ragland, M.D., Los Angeles, Calif.

MY acquaintance with the nutritional work of E. Mellanby, M.D., of England, began in 1924. Since that time I have maintained a continued interest in problems of nutrition. In his discussion on nutritional diseases in animals, in *Proceedings of the Royal Society of Medicine* (London), 17:19-25 (Section on comparative medicine), April, 1924, Mellanby concludes:

"The points I wish to emphasize are that diets containing too much cereal are capable of bringing about widespread and severe pathologic abnormalities; that these changes, while produced to some extent by all cereals tested, are more particularly called forth by oats and oatmeal and wheat germ (and possibly by the germ of other cereals); that the toxic effect of cereals may be completely antagonized by the fat-soluble vitamin contained in cod-liver oil, milk, eggs, etc., and that, in the case of herbivorous animals, a similar vitamin in grass, hay, clover, lucerne, cabbage, lettuce, etc., probably exerts the same beneficial action; that the cereal effect can be antagonized to some extent by calcium salts, especially calcium carbonate, and that out-of-door existence involving exposure to sunlight and sources of ultraviolet rays, by mobilizing the fat-soluble vitamin stores in the body, also helps to neutralize the toxic cereal effect."

In this same article Doctor Mellanby tells us the general basic diet for all his experimental puppies. Here it is: 200 cc. of separated milk; 10 Gm. of meat; 5 cc. of orange juice; and 5 Gm. of yeast. Remember that this was written in 1924.

Now let us see the kind of diet Dr. Mellanby gives his puppies in 1934. I quote from E. Mellanby, *J. Path. and Bact.*, 38:391-407, May, 1934, on page 397. "Puppies 6 or 8 weeks old were given a diet of the following composition: Separated milk powder, 15 to 25 Gm.; cereal, such as bread, 100 to 250 Gm.; lean meat, 10 to 20 Gm.; yeast, 5 to 10 Gm.; orange or lemon juice, 5 cc.; olive or peanut oil, 10 cc.; and sodium chloride, 2 to 4 Gm."

Vitamins and Ferments

As I study the composition of these diets for puppies, the thought comes to me that puppies are carnivorous animals. Has Mellanby been violating a biologic principle all these years? Have our nutrition chemists been so vitamin-conscious that they have forgotten that yeast is an active ferment as well as a source of vitamin B? To me it would seem so. We are shown the deleterious effect of cereals on bones, muscles and teeth in the first article; while in the second we are told

of the afferent nerve and nerve cell degenerations that are caused by vitamin A or carotene deficiencies in puppies.

An animal that is strictly carnivorous can not be adequately fed on a diet containing cereals, yeast and orange juice. I fully recognize the fact that yeast and orange juice are good sources of vitamins B and C respectively. At the same time, I also know that yeast is an active ferment. Yeast and carbohydrate, plus water and a warm temperature, will result in fermentation in the cecum and ascending colon.

Let us consider what fermentation means. Horace G. Deming, in his book, "In the Realm of Carbon" (1930), states that the fermentation of a ton of sugar produces 400 pounds of glycerol; 550 pounds of ethyl alcohol; 100 pounds of mixed aldehydes; and the balance gases (CO₂ etc.). Here also we are told that some yeasts produce fusel oil (higher alcohols, such as propyl, isobutyl, butyl, amyl and caproyl), as the principal product, and ethyl alcohol as a by-product. A strain of yeast was found in Canada that produced 200 tons of acetone from corn and potatoes in a month. How are we to know what kind of yeast we are getting when we eat raw fruit that is contaminated with all kinds of wild yeast? When one considers all the really poisonous products that can be developed by fermentation, is it any wonder that animals, especially the carnivora, that are not built or designed by nature to withstand such poisons, develop bone, tooth, and nerve disorders from such a diet?

Surely, we medical men cannot forget the coma-producing effect of acetone in the diabetic patient. We must remember that paraldehyde or ethylic aldehyde is an old remedy to produce hypnosis or sleep. A toxic dose of this drug produces vasomotor paralysis, as well as a medullary and respiratory center paralysis. If this paraldehyde is produced in the colon, it certainly would have a paralyzing action on the plexuses of Auerbach and Meissner. Let us not forget that these plexuses, located in the wall of the bowel, are only the extensions of the vagus and sympathetic nerves; also that the adequacy of the bowel muscles is definitely dependent on the perfect functioning of these plexuses.

Mellanby, in his 1934 paper, shows that a vitamin-A- or carotene-deficient diet, in young animals, produces a great tendency to the production of septic foci all over the body. The respiratory, genito-urinary, and alimentary tracts can all be involved. So also with the

afferent nerves—all can be the seat of this degeneration. The posterior roots of the spinal cord usually show extensive degeneration. The question is: Is there any relation between fermentation in the colon and *tabes dorsalis*? Can the pneumonias, pyelitis, cystitis, sinusitis, otitis media, etc., have a neurotrophic basis? Are these effects due only to vitamin deficiency? How does vitamin A or carotene cure the experimental animals when the conditions have not progressed too far?

Oxidation Effects

It seems to me that some light comes from the work of H. von Euler: "Carotene and Vitamin A." ("Publications of the Societe de Chimie Biologique No. 21," Paris, 1932). Euler considers that pro-vitamin A, or carotene, is an oxidation catalyst. As I understand these terms, carotene or vitamin A promotes the use of oxygen in the animal body. In 1930, F. O. Schmitt (*Amer. Jour. Physiol.*, Dec., 1930, XCV) shows quite clearly that nerve impulses are dependent on adequate oxidation. "A nerve deprived of oxygen rapidly loses its power to conduct the nerve impulse, but soon regains it if oxygen is supplied." Oxygen, then, is a vitally essential substance. Mellanby points out clearly that herbivorous animals are protected from vitamin-A deficiency effects by the green, succulent foods. These surely contain carotene. The carnivorous animals are protected by vitamin A in cod-liver oil or the liver of their prey. It would seem then that, after all, oxygen in adequate amounts is the thing that really counts. This seems to me perfectly logical, since no air-breathing animal can survive for even a few minutes, or even seconds, without oxygen.

I am convinced that the protection afforded by vitamin A comes about through the oxidizing effect of vitamin A on the products of fermentation. The only way we have to really destroy poisons is by oxidation. Why not, then, consider this question of oxidation and fermentation in man?

Too often, I think, we medical men still consider man to be an especially created creature. We seem to forget our biology. Among the animals, where does man stand? The relation of the length of the intestine to the length of the torso shows man to be much closer to the carnivora than to the herbivora. This is accepted by most biologists today.

Mellanby, in his work on nerve degeneration, found that vitamin A deficiency would cause beginning nerve degeneration in rabbits as early as 6 days, while the same vitamin deficiency in puppies required 3 to 5 months to produce similar effects. It would seem that the herbivora show the effects quickly or acutely, while the carnivora show the more

chronic effects. At this point I recall the fact that fermenting wheat in the cecum of a horse always produces an acute and often fatal colic and intoxication. Man, on the other hand, being closer to the carnivora biologically, does not show the acute toxic effects from fermentation, except when young. Fermenting berries in the colon of a young child are a common cause for convulsions.

Recently, I saw a statement that fermentation in the intestines of man is a normal process. Surely this conclusion must have been drawn because fermentation is so universal among cereal-eating people. I can not agree that it is normal, because fermentation in the intestine of a baby generally means a sick baby. It would seem, then, that adult man will manifest more of the chronic degenerative effects of the products of fermentation when these are not adequately oxidized by carotene, as an oxidation catalyst, or by some other oxidizing agent.

A few years ago, I came across an anonymous statement that struck me forcibly. I quote: "Medicine of today seems to be a patch-work thing, compounded of a thousand unassorted odds and ends thrown together haphazardly." The truth of this statement is certainly evident when one seriously and honestly reflects on the therapeutics of chronic diseases. There is great need at present for a more fundamental type of thinking. More often we must ask ourselves, "Why?" We must more earnestly try to find the real basis of our patient's trouble. Then we can begin to simplify our treatment. This is the goal of the true scientist.

Up to now, our therapy of chronic disease has been a constant attempt to force, coerce or drive forward the defensive mechanism of the body. We have given too little thought to the influences that *retard* our patient's return to health.

The oxygenating capacity of the human body has been estimated to be 750 grams a day. If a large portion of this available oxygen is used up in burning toxic aldehydes, we have too little remaining to carry on our daily bodily functions, including our defense mechanisms.

I think we can say with certainty that yeast fermentation is the same in the animal colon as it is in a flask, keg or vat. If one agrees with this, one can not fail to see that fermentation can retard the defensive mechanisms of the body, and thereby constitutes a prolific cause for many chronic disease states.

For four years now these deductions have been put into clinical use. The results of this work will form the subject matter for a future paper.

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The A-B-C of Cancer

8-B. Tumors of the Gastro-Intestinal Tract

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Intestinal Cancer

CARCINOMA of the small intestine comprises from three to ten percent of all gastro-intestinal cancers, according to the various reports in the literature (Raiford). In the present series there were 16 cases; 7 in the duodenum; 4 in the jejunum; and 5 in the ileum (slightly over one percent of the total). The age incidence ranged between 33 and 68 years. The carcinomas of this region are of



Fig. 2. (Path. No. 45348).—Adenocarcinoma of the Colon, showing Constriction of the Lumen.

the adenocarcinoma type and usually of the constricting and infiltrating form. Occasionally polypoid adenoma with malignant change occurs, or adenocarcinoma with mucoid degeneration is seen.

The symptoms produced are caused by obstruction of gradually increasing severity or sudden and completed blockage following intussusception. Pain, distension and nausea are produced by the carcinomas occurring in the duodenum. Obstruction produces constipation, sometimes alternating with diarrhea. Sudden obstruction is accompanied by pain, distension, vomiting and shock. Bleeding or occult blood in the stool is a common finding. The history of a disappearing palpable tumor is suggestive of neoplasm of the small intestine. With the exception of duodenal growths and those in the region of the terminal ileum, it is difficult to visualize these masses in the roentgenogram. The prognosis for a malignant disease in this region is relatively poor. There was only one cure in the present series.

Appendiceal Tumors: Only 2 carcinomas of the appendix are recorded in this series, although 5 mucocoeles and 22 carcinoids were studied in this location. Failure to distinguish carcinoid or argentaffine tumors from cancer, and the error of confusing mucocoeles or pseudomucinous cysts with colloid carcinoma are factors responsible for the relative fre-

quency with which malignant tumors of the appendix are reported. Loven has reported a case of mucocoele of the appendix complicating an argentaffine tumor. He was able to collect 150 cases of mucocoele of the appendix from the literature. He believed the cysts to arise from inflammatory stricture of the appendix. In these cases the appendix is distended with gelatinous material and an appendiceal fistula, lined by mucosa identical with that of the appendix, may communicate with the peritoneal cavity. Numerous omental deposits, consisting of small sacs distended with mucous and lined by goblet cells and cylindrical epithelium, may be found in such cases where rupture of the primary appendiceal sac has occurred. Indefinite dis-



Fig. 3. (Path. No. 45348).—Photomicrograph showing Typical Structure of Adenocarcinoma.

tress and abdominal distension accompany peritoneal involvement. The tumors are definitely benign but the outlook is grave in the cases with peritoneal transplants.

Adenocarcinoma of the appendix is extremely rare. One case of adenocarcinoma has been reported by Montgomery. In the two cases of adenocarcinoma reported in the laboratory, the patients were operated upon for appendicitis. In one case the appendix was much enlarged and in the other multiple peritoneal nodules were present. Histologically these adenocarcinomas resemble those found elsewhere in the gastro-intestinal tract. In one of the cases studied, mucoid changes occurred.

Cancer of the Colon: Tumors of the colon approximate those of the rectum in frequency and are about one-half as common as those of the stomach. Males are affected twice as often as females. The peak of age incidence is in the fifth and sixth decade.

The earliest symptoms are vague indigestion and change in the character of the stool. The outstanding feature is obstruction, accompanied by constipation, diarrhea or flatulence and distension. Hemorrhage may be manifested by anemia, tarry stools or occult blood on chemical test. Increasingly severe indigestion with nausea and vomiting is a relatively late sign. Perforation, with acute abdominal pain, and cachexia associated with widespread metastases are relatively uncommon.

A mass or muscle spasm may be found at the tumor site on physical examination. A filling defect in the roentgenogram following a barium enema is the most important diagnostic finding.

Three-fourths of carcinomas of the colon are located in the ascending or descending colon. The remainder are approximately evenly distributed between the hepatic flexure, the transverse colon and the splenic flexure. The symptoms vary with the location of the tumor. Anemia is an outstanding feature of carcinomas of the ascending colon and hepatic flexure. In the transverse colon the tumors show a tendency to extend to the stomach, giving rise to gastric distress, nausea, vomiting and to other forms of severe indigestion. Obstructive signs develop relatively early in this portion of the bowel. In the splenic flexure and descending colon, obstruction and tarry stools are the outstanding features.

Operability, the mode of treatment and the prognosis vary with the location of the carcinoma. In the right or ascending colon, resection of the entire large bowel is the treatment of choice. Over 50 percent of carcinomas in this region are operable, and approximately 40 percent of these cases remain well more than five years following such resection. In both the hepatic and splenic flexures less than 50 percent of the cases are operable. The outlook is extremely grave and permanent cures are less than 10 percent. In the transverse colon approximately 85 percent of the carcinomas are resectable, but the tendency for tumors at this site to involve the stomach and mesentery reduces the number of permanent cures to approximately 25 percent. In the descending colon and sigmoid the operability and prognosis is similar to that of the ascending colon. Approximately 50 percent of these tumors are resectable and 40 percent of the cases so treated survive the five-year period.

An end-to-end anastomosis is preferable following resection in the transverse and descending colon, since there is difficulty in mobilizing the bowel in these regions after adequate resection. The leading causes of operative mortality are peritonitis, shock, obstruction and pneumonia or embolus. In the ascending, descending and transverse

TABLE II
Microscopic Classification of Malignant Gastro-Intestinal Tumors

Adenocarcinoma.....	Esophagus.....	4
	Stomach.....	212
	Small Intestine.....	11
	Appendix.....	1
	Colon.....	100
	Rectum.....	210
Total.....		538
Mucoadenocarcinoma.....	Esophagus.....	2
	Stomach.....	21
	Small Intestine.....	2
	Colon.....	55
	Rectum.....	42
	Appendix.....	1
Total.....		123
Fibrosarcoma (Scirrhus).....	Esophagus.....	1
	Stomach.....	15
	Small Intestine.....	1
	Colon.....	16
	Rectum.....	25
Total.....		58
Anaplastic Carcinoma (Medullary).....	Stomach.....	65
	Colon.....	5
	Rectum.....	0
	Small Intestine.....	1
Total.....		71
Primary Mucoïd Carcinoma (Signet-Ring-Cell Cancer).....	Stomach.....	18
	Colon.....	7
	Rectum.....	7
Total.....		32
Squamous Cell Carcinoma.....	Esophagus.....	74
	Colon.....	1
	Rectum.....	12
	Stomach.....	1
Total.....		88
Lymphosarcoma.....	Stomach.....	4
	Small Intestine.....	20
	Colon.....	12
	Rectum.....	2
Total.....		38
Other Forms of Sarcoma, Myosarcoma and Nerve Sheath Sarcoma.....	Various Locations.....	14
GRAND TOTAL.....		962

colon the operative mortality varies from 20 to 25 percent, while that of the flexures approximates 30 percent.

Adenocarcinoma is the predominating histologic type of cancer of the colon. This microscopic form and its variant adenomucocarcinoma comprise 80 percent of all the malignant tumors in this region (see Table II).

The rare forms are squamous, medullary, scirrhous and primary mucoid cancer. All of these are highly malignant, with the exception of scirrhous carcinoma which compares favorably with adeno-mucoid carcinoma or adenocarcinoma in curability. The percentage of metastasis is greatest in the right colon, approximating 60 percent. In the descending or left colon, only 35 percent of the tumors show metastasis to the regional lymph nodes and to distant structures.

Rectal Carcinoma: Carcinoma in the rectum is somewhat higher in frequency than in the remainder of the large bowel. Males are twice as often affected as females and the patients are slightly older (sixth and seventh decades) than those with carcinoma elsewhere in the gastro-intestinal tract. Pain at stool (tenesmus), with the passage of blood and mucus, are the outstanding symptoms. Obstruction is noted, as a rule, only in the higher growths, toward the recto-sigmoid junction. Invasion of the prostate, vagina and bladder, with involvement of the lumbar and sacral plexus, occurs in advanced cases. Hemorrhage, is accompanied by mild anemia. Palpation of the tumor by the examining finger is possible in majority of the cases. Visualization with the proctoscope and removal of a piece of tissue for biopsy makes diagnosis certain in these growths. The polypoid tumors (low grade adenocarcinoma) produce ulceration or constriction.

Histologically, 75 percent of these growths are adenocarcinoma or mucoadenocarcinoma. Fibrous carcinoma (scirrhous cancer) is present in 15 percent of the cases. Squamous-cell and primary mucoid cancer are more common here than in the remainder of the large bowel.

Extension and metastasis from rectal cancer is more frequent than with malignant tumors of the colon. In approximately one-third of the cases, the surrounding structures are invaded and in another third the lymph nodes, liver or distant organs are involved by metastases. Because of the spread of the disease at the time of its recognition, combined operation from above and below (abdomino-perineal resection) is the treatment of choice. Miles prefers doing both abdominal and perineal approaches at one stage. Rankin advocates the abdominal procedure in the first stage, with the formation of a permanent colostomy, followed by a period of several weeks before attempting the perineal resection. The advantages of such a preliminary

abdominal procedure are to determine the extent and operability of the growth, reduce peritonitis by extraperitonealizing the disease, and lessening the shock by dividing the operation into two stages. The mortality approximates 5 percent in the two-stage operation, in expert hands. The average mortality approaches 20 to 30 percent. A few growths near the anus can be removed by perineal dissection alone with restoration (usually incomplete) of sphincteric control, but the recurrence rate is high with this procedure.

In the series of 370 rectal cancers seen at the Johns Hopkins Hospital over a period of 45 years, 53 percent were inoperable; 10 percent refused treatment; 37 percent were operated upon, with an immediate mortality of 22 percent. Only 10 percent of the patients were living and only 5 percent cured for a period of five years or over. In the more recent cases, operability has reached 65 percent; the mortality 10 percent; and cures 36 percent.

Sarcoma of the Digestive Tract

Sarcoma of the gastro-intestinal tract comprises about 2 percent of malignant growths in this region. The major form is lymphosarcoma. The stomach is affected more frequently than the small or large bowel. D'Aunoy *et al.*, found 335 gastric sarcomas in the literature, of which 63 percent were either lymphosarcomas or round-cell sarcomas. Fourteen (14) percent were myosarcomas or fibrosarcomas, the fibrosarcomas probably including tumors of neurogenic or myomatous origin. Stämmler, in 1924, collected 394 cases of sarcoma of the small and large intestine, 218 of which were localized in the small intestine. Of the 218, 34 were in the duodenum. Dvorak was able to collect only 30 verified cases of sarcoma of the esophagus; these were of the round-cell or spindle type, probably lymphosarcomas and myosarcomas.

Lymphosarcoma: In the present series of cases there were 45 lymphosarcomas, 13 in the stomach, 20 in the ileum, and 10 in the cecum. There were 2 in the rectum and sigmoid and 1 in the duodenum. The lymphosarcomas produce obstruction relatively late and give a prolonged history of dull, dragging pain, loss of weight, weakness and anemia. Nausea is intermittent and bleeding is rare. A slight rise in temperature is common. Intussusception may occur when the small bowel is affected. Kasenmeyer estimates that 10 percent of intussusceptions are caused by sarcoma. These growths may dilate the intestinal tract rather than constrict it, giving rise to a diffuse infiltration, which stiffens the wall of the digestive tube so that it resembles a garden hose.

Other Forms of Sarcoma: Myosarcomas were found in only four cases in this series; twice in the stomach, once in the ileum and once in the rectum. Although benign myomas

are relatively common in the digestive tube, malignant tumors of this type are exceedingly rare. The stomach and small intestine are more often affected than the colon and rectum. These lesions produce large, solid growths which metastasize relatively late to the liver and lungs.

Ten (10) sarcomas of the nerve sheath were studied: 4 in the rectum; 3 in the stomach; and 3 in the small intestine. Microscopically they resemble the more common neurogenic sarcomas of the peripheral nerves. One of the cases in the small intestine was associated with multiple subcutaneous nerve sheath tumors of the von Recklinghausen type. All of the cases terminated fatally.

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CANCER NOTES

Never neglect a chronic sore on the lip. If it resists antisymphilitic treatment, insist on a microscopic examination of a section from it. Death from cancer of the lip is unnecessary.

Any operation for cancer that does not remove the regional lymph-glands as well as the primary growth can give no hope of cure.

Always remove causes for irritation when treating any sore of the mouth.

A diagnosis between syphilis and malignant disease in the mouth may be extremely difficult. Never fail to have the Wassermann test done, and do not overlook microscopic diagnosis. When either of these is not obtainable, give the iodide of potash and mercury, in increasing doses, for at least three weeks.

Do not forget that almost all cases of primary bile-tract cancer have been long suffering from gallstones. It is practically certain that gallstones are the cause of all primary cancers of the gallbladder.

The gallbladder is often hard and nodulated and often has thickened walls when no cancer exists.—DR. AUGUSTUS C. BERNAYS, in "Golden Rules of Surgery."

ORIGINALITY

The best kind of originality is that which comes after sound apprenticeship; that which shall prove to be the blending of a firm conception of all useful precedent and the progressive tendencies of an able mind. For, let a man be as able and original as he may, he cannot afford to discard knowledge of what has gone before or what is now going on in his own trade or profession.—AUTHOR UNKNOWN.

CULTURE

Culture is being a citizen of the universe, not merely of one or two fragments of space-time; an understanding of human society as a whole; the ability to estimate wisely the ends that communities should pursue, and to see the present in relation to past and future.—BERTRAND RUSSELL.

PHYSICAL THERAPY AND RADIOLOGY

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Treatment of Essential Hypertension and Diabetes with X-Rays

By James H. Hutton, M.D., F.A.C.P., Chicago, Ill.

THIS work was undertaken with the idea that essential hypertension and diabetes mellitus are due to a dysfunction, probably in the nature of a hyperactivity, of the pituitary or the adrenals or both, and that the x-rays, because of their inhibiting effect on glandular function, could be used to reduce this abnormal function to normal levels, thereby removing the causative factor in these two syndromes, with their consequent relief. I am not so sure that this theory is entirely correct, but certain phenomena have been observed to follow the application of the x-rays to the pituitary and adrenals in the treatment of these two syndromes. I am now reporting these phenomena and leaving their interpretation to abler men.

The criticism has been made that the same agent should not be used to treat both conditions, because of their dissimilarity, but it should be pointed out that these conditions bear more resemblance to each other than is usually thought to exist. Hypertension is one of the most common complications of diabetes. About two-thirds of our hypertensive patients exhibit a diabetic type of sugar curve. Arteriosclerosis commonly accompanies both conditions. More diabetics die of cardiovascular disease than from any other condition¹; so even in death these syndromes rather closely resemble each other.

Procedure

The usual history is taken and physical examination made. A number of urinalyses are done. In most cases a blood count is made and in the majority of cases some blood chemistry studies are conducted—determination of the non-protein nitrogen, urea, calcium and cholesterol. A phenolsulphonephthalein

test is frequently done. In many cases the basal metabolic rate is determined. The majority of patients are subjected to Steiglit's amyl nitrite test. In a third of the cases, a glucose-tolerance test has been run. In perhaps half the cases, a roentgenogram has been made of the sella turcica.

The urine occasionally shows a trace of albumin; more rarely hyaline casts. Albuminuria is not constant, but, in my experience, occurs occasionally in most cases of severe hypertension. The blood count very frequently shows a lymphocytosis and an increase in the eosinophils. The blood calcium is more often than not on the low side of normal. The blood cholesterol is rarely outside of normal limits. The fasting blood sugar is usually within normal limits. We have done sixty-three glucose tolerance tests on 61 patients. Forty-one (41) showed a rise in blood sugar to above 170 mg. per 100 cc., 29 showing a blood sugar above 200. Glycosuria was rarely observed. The basal metabolic rate is about as often below normal as it is above, but in two cases it was significantly elevated; in one to plus 48 percent, and in the other plus 56 percent.

The amyl nitrite test, I feel, gives some idea as to whether the patient is likely to experience a reduction in blood pressure by x-ray treatment. If there is but little fall in blood pressure during the inhalation of this drug, little reduction in pressure can be expected from x-ray treatment.

The dye test is practically always within normal limits. Films show an abnormal amount of calcium in or about the sella turcica, in most cases. The size of the sella is normal in nearly all cases.

Treatment

We have used a number of different doses, with many variations of the factors in treatment. The optimum dose is still not determined. It probably varies with the size and age of the patient and with the severity or duration of the hypertension. I am of the opinion that whatever good is accomplished is obtained with very mild doses of the x-rays. The highest dose we have used was with the following factors:

Part	KVM	Port	Filter	STD	Ma	Time	RU
R. pit.	180	10x10 cm.	1 mm. Al. 0.25 mm. Cu.	50 cm.	5	15 min.	142.5
L. pit.	180	10x10 cm.	Same	50 cm.	5	15 min.	142.5
Adrenals	180	15x15 cm.	Same	50 cm.	5	20 min.	190.

Patients exposed to these factors almost invariably experienced an unpleasant reaction, in the form of headache, vertigo, occasionally nausea, and a feeling of weakness. In most instances there was not the slightest reduction in blood pressure after this treatment. Patients who were given these doses were allowed to go without further treatment for a month or six weeks, and then given a very light dose. Following this their symptoms were relieved and there was a further reduction in blood pressure.

I now use 120 KVM; same portals as before; 2 mm. aluminum filter; 5 milliamperes; 50 cm. skin-target distance; and enough time to deliver 75 R units to each side of the pituitary and 100 R to the adrenals.

Lingley, Baird and Palmer² reported the unsuccessful use of this form of therapy in eight cases of essential hypertension. Their doses were nearly twice as heavy as our heaviest one.

Frequency of Treatment

At first these treatments were repeated at weekly intervals until six were given. Nowadays, if there is considerable reduction in blood pressure, a second exposure is not given until the blood pressure begins to rise. If there is no reduction after one treatment, a second is given at the end of a week and so on until six are given.

The disadvantage of too frequent repetition of doses is illustrated by the wife of a physician who experienced a reduction from 260/130 to 170/110 after one treatment. Ten days later she was given a second light treatment to the adrenals, following which there was a prompt return of symptoms, with a rise in blood pressure to the original level. This has declined under subsequent treatment. The symptoms have all cleared up.

Results

We have treated 164 cases of hypertension—110 men and 54 women. Thirty-three (33) have had an insufficient amount of treatment;

9 could not be followed; 25 were unimproved; and 97 were improved. In addition, we have treated 18 cases of hypertension and diabetes combined—13 men and 5 women. Of these, 7 were improved as to both conditions; 4 as to their hypertension; 3 as to their diabetes; 3 had insufficient treatment; and 1 could not be followed.

By improvement I mean that the symptoms have been relieved and that there has been a reduction in blood pressure of more than 30 mm. in the systolic or more than 20 mm. in the diastolic. The symptoms respond to this form of therapy much more strikingly than does the blood pressure. Symptoms are frequently relieved before there is any significant reduction in blood pressure. When there is a secondary rise in blood pressure after a reduction, the symptoms frequently do not recur.

Blood pressure response: In some cases there is a prompt and striking reduction in blood pressure after the first treatment. In others there is a rise in blood pressure, lasting for at least seventy-two hours. In one case the blood pressure rose after each of three treatments, but fell markedly after the fourth treatment. In some cases there is a satisfactory reduction almost or quite to normal levels in the systolic, with but little drop in the diastolic. In other instances this formula is reversed; the diastolic falls to nearly normal levels, with a much smaller reduction on the systolic side.

At least two cases have experienced an infection in which the blood pressure rose to the original level. In one case it declined when the infection disappeared. In the other case it was satisfactorily reduced after further treatment.

Discussion

It is suggested that psychology plays a large part in the reduction of blood pressure following this treatment. However, one of our most striking results occurred in a man who had been promised all kinds of dire consequences following this treatment. The same suggestion was offered to patients regarding the very heavy doses, which were without effect, as was offered when they had the light doses which were quite effective. Many of these patients have been victims of hypertension for some years and psychology seems not to have operated to advantage, coincident with other forms of therapy.

Other critics urge that the reduction in blood pressure occurs as a result of the biologic effect of the rays, and that exposure of other parts of the body to the x-rays would have the same effect. The lack of response following the heavy doses is one answer to this argument. Another is the case of Miss W., who had had one breast removed for carcinoma by Dr. Philip H. Kreuscher, and

postoperatively had had two series of deep x-ray therapy over the chest. At the conclusion of the second series her blood pressure was as high as it had ever been. After four light doses of x-rays to the pituitary and adrenals, the blood pressure was reduced to normal figures, where it has since remained.

Men in other institutions, who reported the unsuccessful use of this form of therapy, have used much heavier doses than we employ^{2, 4}.

Side Effects

The skin shows considerable reaction following these treatments. It usually becomes more moist, smoother and of better texture. The nails, in many instances, also improve in texture and become less brittle. One girl had a heavy growth of black hair on her legs, extending to her groins. Her skin was very rough. Most of the excess hair disappeared and the texture of her skin improved following treatment. Another woman had psoriasis, which showed an excessive amount of scaling. The scales disappeared after treatment.

Menstrual disorders are usually corrected after this treatment. This is in line with the experience of Drips and Ford³.

One woman had a blood pressure of 170/100 and complained of nervousness, tachycardia, palpitation and insomnia. The basal metabolic rate was plus 48 percent. Neither the symptoms nor the blood pressure was influenced by Lugol's solution. After three x-ray treatments the blood pressure was reduced to normal figures, the symptoms were relieved and the basal metabolic rate was reduced to minus 6 percent.

Another case had had a subtotal thyroidectomy in 1928, another in 1929 and a third had been recommended in 1934. There was a nodule in the thyroid region. She had the usual signs of Graves' disease. The basal metabolic rate was plus 56 percent. The blood pressure was 205/75. After six treatments to the pituitary and adrenals her symptoms were almost entirely relieved, her blood pressure was 135/88 and the basal metabolic rate was plus 18 percent.

We have treated a number of diabetics, with variable results. These will be reported separately. Dr. Barnes has treated a number of cases of experimental diabetes in dogs. He has already made some report of this work.

Conclusions

This treatment was intended only for cases of essential hypertension. It may be that this terminates in or combines with nephritic hypertension in later years. In such cases the results of therapy are not so good.

The symptoms have been relieved by this treatment in about 75 percent of this small series of cases. The blood pressure has been considerably reduced in about 75 percent of the cases receiving adequate treatment. Whether these results are permanent cannot yet be determined. Patients who are victims of diabetes and hypertension, in our small series of cases, have been relieved of one condition or the other in most instances, and in seven cases both conditions have been improved. Whatever good effects can be accomplished by the x-rays can be brought about by small doses.

I am indebted to Dr. Dowdall and to the staff of The Illinois Central Hospital for their cooperation and the privilege of seeing cases and for the privilege of including in this series the cases of other men, that I did not personally see. I am particularly indebted to Dr. Culpepper for his insistence on using very mild doses of the x-rays, and to Miss Dubois, in the x-ray department, for her splendid cooperation and for much valuable advice.

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NOTES AND ABSTRACTS

Treatment of Pelvic Inflammation by Heat*

THE opinion of most physicians, in the treatment of the genital tract of women, is that conservative medical measures take precedence, as a rule, over surgical treatment, for the desire is to conserve tissue and tissue function. Surgical measures are employed to evacuate pus and to treat those conditions

where conservative treatment has failed. Three factors are concerned with conservative treatment: time, rest and heat.

The proper application of heat to the genital tract, increasing the temperature of the pelvic viscera, promotes local leukocytosis.

The most recent and efficient method of applying heat is the one developed by Elliott. A supply of water, under controlled pressure and temperature, circulates through a specially shaped, elastic rubber applicator which

**Minn. Med.*, Jan., 1935.

is placed in the vagina. The pressure is regulated to distend the vagina, flattening the rugae and pressing against the cervix and fornices of the vagina, thus allowing the maximal amount of contact with the viscera to be treated. The pressure necessary to accomplish this will vary with each patient and perhaps with different treatments in the same case. Palpation of the amount of distension of the bag in the vagina is a better index of necessary pressure than the reading on the pressure gauge of the treatment machine.

Given a sufficiently distended bag, that amount of heat is applied which can be tolerated at that pressure. This will be found to average about 125 degrees Fahrenheit.

Our usual practice in administering a course of treatments is to make an application of 15 to 30 minutes on the first day, 30 minutes on the second day, 45 to 60 minutes on the third day and to continue thereafter with a treatment of one hour's duration, once or twice a day. At the beginning of any given treatment the temperature of the water should be between 110° and 115°F. The temperature is raised, in the course of 10 to 15 minutes, to the maximal tolerance of the patient. The average patient is able to tolerate a temperature of between 125° and 130°F. for an hour, under a pressure of 1 pound to 1½ pounds. There are individual variations, however, so that the maximal pressure and temperature will need to be determined for each patient.

The applicator is inserted, completely empty of water, folded and lubricated with any lubricating jelly. The rubber tube leading to the bag is covered with several layers of wet gauze, to avoid irritation at the introitus. It is preferable, after the bag has been inserted and filled, to examine, either through the rectum or through the vagina, to be sure that the bag is in its proper position.

LAWRENCE M. RANDALL, M.D.,
and VIRGIL S. COUNSELLER, M.D.

Rochester, Minn.

Look for **THE LEISURE HOUR** among the advertising pages at the back.

I have had to cut down my medical journals to two, one of which is **CLINICAL MEDICINE AND SURGERY**. I expect to continue my subscription to this *real, practical* journal as long as I am in the practice of medicine.—Dr. W. E. H., Iowa.

BOOKS

Kovács: Electrotherapy and Light Therapy

ELECTROTHERAPY AND LIGHT THERAPY. By Richard Kovács, M.D., *Clinical Professor and Director of Physical Therapy, Polyclinic Medical School and Hospital, New York; Physician in Charge Physical Therapy, City Hospital, New York; etc.* Second Edition, thoroughly revised. Illustrated with 263 Engravings and a Color Plate. Philadelphia: Lea & Febiger. 1935. Price, \$7.50.

If every physician who aspires to use physical therapeutic measures in his practice (and that should include practically all of them) would make a careful study of the basic physical principles underlying the mechanism and operations of the various agencies, before he starts buying apparatus, there would be fewer dissatisfied doctors and patients. So far as the various electrical and light agencies (including ultraviolet and infrared rays) are concerned, all one needs to know will be found between the covers of this volume.

Beginning with elementary electro-physics, the text goes on to the physics of the different electrical currents, dealing with the apparatus for their production, explaining their action on the body and describing the technic of application, the indications, contraindications and the possible dangers involved. The physics of radiant energy, the effects of the various forms of light, the clinical application of heliotherapy and of artificial sources of light are similarly presented. The rationale and methods of application of electrical currents and radiant energy in various pathoses are discussed, and the correlated or alternative use of other and simpler physical measures is emphasized. Well-chosen illustrations strengthen the text of every chapter.

This new (second) edition has been largely rewritten and simplified, and several new chapters (ionic medication, hyperpyrexia, short- and ultra-short-wave therapy, proctology, etc.) have been added, as well as 86 new illustrations.

At the end of every chapter there is an adequate bibliography; the indexes occupy 26 double-column pages; the book work is excellent.

Here is an inclusive (but not tiresomely technical), conservative and authoritative presentation of all phases of the subjects discussed. The book ought to be in the library of every physician who uses the agencies dealt with, for frequent, careful study and daily reference.

BIRTH CONTROL AND PEACE

War is the most ineffective, cruel and foolish method by which society tries to relieve population pressure. Birth control is a thoroughly sound, sensible and, in the long run, effective method of meeting the same problem.

—DR. RAYMOND PEARL.

PROCTOLOGY



ASSOCIATE EDITOR

WILLIAM A. HINCKLE, M.D., Peoria, Ill.

Trans-duodenal Irrigation versus Colonic Irrigation

By Max Ernest Jutte, M.D., New York City

THE disagreeable and, in colonic ailments, often actually harmful effects of colonic irrigation are evidence of the urgent need of a better method for the prompt removal of stagnant and irritating bowel content. Such a method should be devoid of unpleasant concomitants, it should unload the bowels quickly, effectively and painlessly and, to obtain the best effects, should enable the bowels to have a thorough rest for an appreciable length of time.

Condé¹, who introduced colonic irrigation in Europe in the treatment of autointoxication to carry away the putrid waste materials and, in colitis, the mucus and the membranes always teeming with every kind of bacteria, himself mentioned as contraindications: severe enteroptosis, intestinal atony, spasms and pain. He pointed out that the large intestine, being very contractile, especially when diseased, is apt to suffer prolonged spasms from the slightest irritation. So common are severe cramps, pain, discomfort, nausea and even fainting spells, that they are almost considered to be a natural phenomenon, and little is made of them when they occur. They are, however, evidence of structural abnormality or of existing pathosis, hence the present vogue of colonic irrigation in the United States is wholly unmerited, and it should be discontinued as a routine measure, as it has been in Europe, whenever there is any colonic irregularity of whatever nature.

One of the principal disadvantages of colonic irrigation is that it never reaches the small intestine, and any benefits obtained are transient and strictly limited to the colon, since no sooner has the colon been cleansed than it is again swamped with the foul and fermenting material that, in the sick, constantly descends from the small bowel.

Trans-duodenal irrigation^{2, 3, 4} is a method of flushing the entire intestinal tract, from pylorus to anus, in the direction of peristalsis;

thus, the small intestine is given a cleansing no less than the large bowel.

Trans-duodenal irrigation has none of the disadvantages mentioned. Being merely a gentle washing process, it has no contraindications, except, of course, acute appendicitis. It involves merely the passing of a duodenal tube which does not come into contact with the irritated portions of the bowels. Instead of gallons of water, only a comparatively small amount of fluid is used, which spreads quickly and is readily taken hold of by the peristaltic contractions. Indeed, since the fluid merely trickles into the duodenum and is from there carried along by peristalsis, there is no accumulation, distention or irritation, only a washing of the mucous membranes and a gentle churning to and fro of the fluid. This arrives, in time, together with food remains, mucus, pus and the entire intestinal flora, bit by bit, in the rectal pouch, from there to be expelled in several semi-fluid movements.

In trans-duodenal irrigation we have a means, not only of avoiding the natural resistance which the colon offers to the upward passage of a foreign body and to water forced up from below, but the bowels are given the benefit of a complete rest over a number of hours; that is, exactly as long as it takes the remains of the next meal to come down. During this time they are free from everything except intestinal secretions. The advantage of such a period of rest, especially in colitis, is evident.

Because of the absence of irritation, trans-duodenal irrigation may be employed in those conditions in which colonic irrigation is inadvisable, as in ulcerations, enteritis and spastic constipation.

The treatment is administered through a duodenal tube, which is introduced to a point just beyond the pylorus. The reason for the use of the tube is that the irrigating solution

is extremely unpalatable and would nauseate the patient, if swallowed. The amount required is small—only one quart—and the solution is so constituted as to prevent it from being absorbed in the small intestine and to expedite expulsion.

The entire treatment takes only from five

of the tongue. The patient should then breathe audibly through the mouth. Guided by the presence or absence of resistance, gently but quickly slide the tube further down until the one-ring mark on the tube is reached. Then with one hand hold on to the obturator and slide the rest of the tube down



Fig. 1:—The Jutte Duodenal Tube.* Actual Size.



Fig. 2:—The Tube and Suction Bottle.

to ten minutes and is easy to take. Expulsion begins within about one hour.

Equipment and Technic

Armamentarium: (1) a duodenal tube—any of the tubes in common use may be employed. The one here illustrated (Fig. 1) is the best, because the patient need not swallow it inch by inch. Being equipped with an obturator, it can be manipulated like a stomach tube and introduced manually. Besides, its sinker is so small that it slips readily through the pylorus, even when that organ is only partially dilated; (2) a two-hole suction bottle (Fig. 2); (3) a large-size syringe, for suction; (4) a one-quart glass irrigator; (5) the solution, which consists of one quart of warm water, slightly above body temperature, containing $2\frac{1}{2}$ drams each of sodium chloride and dried sodium sulphate; (6) glycerin, for lubricating the interior of the tube to facilitate withdrawal of obturator; (7) bicarbonate of soda, sodium chloride and dried sodium sulphate.

Modus Operandi: The patient should come to the office with an empty stomach. If desired, benumb the back of his tongue with a suitable tablet or spray, but this is rarely necessary. Drop a little glycerin into the long arm of the duodenal tube and insert the obturator so that it fits into the hollow stem of the sinker. Prepare the solution. Place the end of the tube on the root of the patient's tongue and ask him to go through the act of swallowing once. At the moment of swallowing, thrust the end of the tube over the root

until the three-ring mark is reached, or within 3 or 4 inches of it. The obturator is then entirely withdrawn. The patient should then breathe through his nose and lie down on the operating table on his right side.

Connect the short arm of the tube with the long arm protruding from the patient's mouth, and with the irrigator, and let a wineglassful of warm water containing half a teaspoonful of bicarbonate of soda, run into the stomach; the soda will relax the pylorus and the tube will slip through it. The moment it has passed into the duodenum can be accurately observed by making the **Jutte test**, as follows⁵:

Connect the tube with the suction bottle, and aspirate. As long as the aspirated fluid comes down into the bottle and flows like water, that is, in a steady stream and at length drop by drop, the tube is likely to be still in the stomach. But just as soon as it passes into the duodenum, aspiration will bring up some duodenal juice which flows like syrup and draws out into a thin or thick, ropy strand. This is proof positive that the tube is in the right place.

In pylorospasm, more soda solution may have to be used and aspiration be repeated several times. Ordinarily the tube passes through within a minute or two, if the tube described is used. The irrigating solution can now be run in, which takes about two or three minutes. When finished, follow this up with a little plain warm water, in order to save the patient from the taste of the nasty solution. Withdraw the tube quickly, but

*Jetter & Scheerer Corp., 251 4th Ave., New York City.

gently, and let the patient rest on his right side for a few minutes, to prevent backflow. He may then go home and eat.

Within an hour or two there will be three, four or five fluid movements and the patient is apt to feel much relieved, and free and easy. Should he drink several glassfuls of water, this may come away clear, showing how thoroughly clean the bowels are.

Treatments may be given once or several times a week, and later more rarely, according to indications. The bowels do not become habituated. On the contrary, in chronic constipation they tend to resume their normal function after a comparatively small number of treatments.

Indications

The indications for trans-duodenal irrigation are: All conditions of the small and the large intestines themselves, such as ulcerations¹³, excessive fermentation, colitis, spastic and atonic constipation⁶, diarrhea, perverted flora, stasis⁸ and ptomaine poisoning. Also, infections of the intestinal tract—intestinal toxemia or autointoxication—and the innumerable symptoms and complaints in which pathologic absorption is the underlying factor. Among these are, according to Bassler⁹, fatigue; general physical and mental depression; secondary and primary² anemia; acidosis; high blood pressure and angina pectoris; chronic bronchitis; asthma²; a tendency to colds, biliousness and other liver and gallbladder conditions; infections of kidneys; uremia; chronic arthritis; gout; rheumatism; endocrine disturbances; certain severe headaches¹⁰; a host of nervous disorders; eczema; urticaria; and many other complaints.

Surgery and the other specialties also offer a fertile field for the use of trans-duodenal irrigation, as in vomiting of pregnancy¹¹; pernicious hiccup¹²; postpartum eclampsia; uremia and edema¹²; postoperative ileus^{12, 13} (here fecal gastric contents must, of course, be removed first, which can be done through the tube). In short, trans-duodenal irrigation may be employed with the expectation of satisfactory results whenever the time element, thorough cleansing and freedom from distress are factors of importance.

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NOTES AND ABSTRACTS

Colon Irrigation in Chronic Ulcerative Colitis*

EMERY and Wosika, of Peter Bent Brigham Hospital, Boston, say that colonic irrigations continue to hold the attention of the laity and the profession, for the same reasons that the ancients believed that the intestines contain material detrimental to the health of the individual.

In spite of the fact that no one has yet shown at what point in the tract the intestinal contents cease to be an asset and become a liability; in spite of the fact that anyone can demonstrate that irrigations definitely result in irritation of the colon, physicians continue to prescribe them and patients to demand

them. The urge to use them in ulcerative colitis is strengthened by the presence of an obvious infection, although the possibility of being able to overcome infection in the intestines, which normally teem with bacteria, is slight. Physicians also lose sight of the fact that the use of colon washes also offsets all the procedures that are being advocated to supply the cardinal principle of rest to the affected part.

These authors state that they have never seen any improvement result from enemas, medicated or otherwise, in ulcerative colitis, and have frequently seen harm ensue. All the more common varieties of enemas have been tried on the patients in their series, without benefit. These include enemas of olive oil, silver nitrate solution, starch, zinc sulphate,

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quinine, boric acid, mercurochrome, potassium permanganate, acidophilous organisms, gentian violet and irrigations through the appendix.

W. A. H.

The Syndrome of Hypertonic and Atonic Colopathies*

FRED H. KRUSE, M.D., San Francisco, Cal., says that the term, colitis, should be limited to include only inflammatory states of the large bowel. These inflammations may range from simple catarrh to chronic ulcerative colitis. Chronic constipation and intermittent diarrhea, which represent by far the greater proportion of chronic bowel disorders, occur with no definite lesions of the mucosa, and so should not be classed as colitis.

While foci of infection or inflammation of adjacent and associated organs or tissues may produce secondary bowel disturbances, treatment of these conditions alone is usually disappointing. Atonic and spastic constipation and mucous colitis appear as opposite conditions, yet they are closely related. This arrhythmia is due to imbalance, or lack of coordination between the sympathetic and parasympathetic divisions of the autonomic nervous system. The bowel may be atonic at one time and hypertonic at another. More often, one part of the bowel will be hypotonic and another part will be hypertonic. Either hypotonicity or hypertonicity may produce obstinate constipation.

The sympathetic system, which directly antagonizes the para-sympathetic, through its inhibitor or depressor action, produces loss of tone and diminished secretion. Megacolon is the extreme form of over-activity of the sympathetics. The phlegmatic type of individual is more subject to atonia.

When over-active, the parasympathetics, chiefly through the vagus, increase secretion, tonicity and motor activity. If over-stimulated, they cause excessive formation of mucus and lead to colic and hyperirritability. Hyperactivity of the parasympathetics is often associated with certain nervous and psychic disturbances.

Patience and education will finally bring these patients to relative stability. Surgery, even when indicated for associated conditions, usually leaves the intestinal trouble unrelieved. When atony predominates, relief of

fecal retention by repeated small flushings, oil retention enemas, oil by the mouth, and mild peristaltic stimulants is indicated. The diet should be well balanced but bland, and should contain much soft pulp and vitamins, especially vitamin B.

When hypertonia predominates, rest in bed, with freedom from cares and worry, is necessary. Sedatives and mild hypnotics should be adjusted to the needs of the patient. All laxatives and irrigations should be avoided. Intestinal lubricants and oil retention enemas are needed. Soaked, soft agar and strained psyllium are advisable. A bland non-irritating and balanced diet, with no roughage, must be followed until improvement permits a more gradual return to a normal diet. Symptomatically, those remedies which help in controlling dyspepsia must be given consideration, such as colloidal kaolin for bowel fermentation and gas, acidophilus cultures, dilute hydrochloric acid or alkalies, digestive ferments, especially pancreatin, and possibly yeast.

W. A. H.

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LANDMAN says: "When kinks, adhesions or angulations of the bowel cause difficulty in passing a scope beyond the rectosigmoid junction, a ball of cotton on the end of a proper carrier, if pushed into the center of the proctoscopic field, will often lift and straighten the bowel, thereby guiding the scope in its upward passage."

W. A. H.

CLINICAL MEDICINE AND SURGERY gets better all the time.—J. P. J., M.D., Ala.

NEWS

American College of Proctology

THE twelfth annual convention of the American College of Proctology (now a strictly medical organization) will be held in Chicago, September 18 to 21, inclusive, 1935. Full particulars may be obtained by writing to the College at 448 South Hill Street, Los Angeles, California.

*J. A. M. A., Nov. 3, 1934.

IT IS MORE BLESSED TO GIVE THAN TO RECEIVE

If you have had unusually good results in the treatment of the colopathies, mucous or ulcerative, will you not write the Editor of this Department at once, giving in brief detail your method and technic that we may pass it on to the profession?—W. A. H.

A LIVING FOR THE DOCTOR

(The BUSINESS of Medicine)

Some Things the Depression Did to Us

By Emmet Keating, M.D., Chicago, Ill.

WHEN, one after another in rapid succession, the financial bubbles began bursting in 1929, there was a short period when few people realized the extent which the financial collapse would attain. Gold is a great coward and, as usual, it went into hiding. The tide did not turn and disaster followed disaster until all seemed lost. The closing of the small banks was a great tragedy for that large number of people who were not wealthy, but who were prosperous and happy. With the bank failures; the collapse of the stock and bond market; the suspension of work for the building trades; and the closing of many factories, the depression reached its deepest point. It is doubtful if any American citizen had ever before had the experience of seeing despair written upon so many faces.

At the usual places where men gathered, for business, recreation or in lodges where the practice of benevolence is the foundation of their activities, dejection of spirits and a hopeless attitude were always apparent. Gone were the bright smiles and buoyant greetings.

Women showed the effect of the strain and stress less than the men. One of the first things to disappear from the wardrobes of many American women were the silk stockings which had ceased to be regarded as a luxury, to be worn only on special occasions, and had come to be considered a necessity for everyday wear. The cotton stockings which had been good enough for mother again came into evidence. As usual in times of stress, women did not lose hope and faced the future with a smile.

Prior to the 1929 disaster, the number of people receiving help from organized charity had been increasing for many years. Following the civil war of 1861 to 1865, organized charity came into the field of the economic life of the United States. It was argued that it would serve to teach people to be self-supporting, and that the number of those requiring help would each year be reduced. This optimistic picture was soon to fade from the canvas. The relief clients did not diminish in number, but continued to increase. The

workers in the ranks of organized charity rapidly gained in numbers, until the upkeep of the organization reached the place where organized charity became entitled to rank as one of the world's big businesses.

With the sweeping away of large fortunes, organized charity was no longer able to supply the needs of the poor or maintain its expensive organization. An appeal for government help was the next step. Union labor was the first to ask state legislatures for financial aid for the destitute. The burden was at once moved from the shoulders of the rich and distributed among all citizens, rich and poor. The acceptance of charity, which Americans had once considered a disgrace, became a tragic necessity for many people, temporary in some instances, but permanent in all too many. For many of the people in our country, who had lived under paternal governments in Europe, the acceptance of charity was taken as a matter of course. The dole was accepted as a right and the mouth of the gift horse was often sourly inspected and the gifts accepted with ill will and discontent. In other cases, people who received gifts of food, sold what they did not consume and made a profit.

The change from abundance and lavish expenditure to inescapable economies was a tragic blow to the mental health of the people of the United States. An aftermath of suicide, by men who had succeeded, above others, in gaining positions of wealth and influence, startled and appalled the world. In very few instances were the deaths by suicide accounted for by dishonest practices indulged in by the victims, but were due to a mental disease that made it impossible for them to re-adjust their lives to lower incomes. Strange as it may seem, these tragedies acted to stem the tide of despair and hopelessness which threatened to engulf great numbers of our citizens. It helped to make men and women awaken to the fact that luxuries that had come to be considered as necessities could be dispensed with without fear of criticism or social ostracism. Selfishness, which was the outstanding feature of great prosperity, gave

way, in part, to the human interest that, in earlier days, had made all men brothers.

The ills of mind and body caused by the depression were only in a small degree amenable to treatment with the drugs so necessary in combating ordinary physical diseases. Distraught nerves could be temporarily quieted by the use of various sedatives and hypnotics, but wise physicians placed no reliance upon their value for continued and long-extended use. Never in the world's history did wise counsel on the part of physicians take the place of drugs as it did when the depression was at its worst. These efforts on the part of the medical profession were individual efforts and were not proclaimed to the general public.

In addition to the moral props supplied to patients by the medical profession, the church, the radio and the press wielded their great influence in restoring men and women to mental attitudes that made possible the successful carrying on of life's affairs. As the months and years went by, the talk of good times being just around the corner ceased to be heard. The desire for great riches, which had been responsible for foolish investments by good citizens and had made calloused criminals of those of weakened morals, began to recede. The hopelessness of regaining what had been lost financially became apparent to the people in general. With the acceptance of this fact and the realization that extravagance had too often been an injury to health, nearly everyone learned anew that the real pleasures of life are simple and inexpensive ones.

The medical profession did not escape financial distress. Doctors lost money in closed banks; the securities which most of them had purchased from the banks became worthless; mortgages which had seemed an easy burden fell due, with no money for interest or refinancing. As in all walks of life, the most favored, from the standpoint of income, suffered the most mental stress. "Keeping up with the Joneses" is an especially difficult rôle for physicians. Study days are never over for the right kind of doctor. Study and the social whirl do not mix. With money lost and income sadly curtailed, a few doctors also took the suicidal way out of their earthly difficulties.

In the large cities of the United States the medical profession is divided into the following income groups:

- 1.—The eminent professors, few in number, whose hospital connections make possible large incomes.
- 2.—The family doctors whose clients are the prosperous middle class.
- 3.—The family doctors who, for various

reasons, number their clients among the poor and lowly.

- 4.—The industrial doctors, most of whom work for small salaries.

Of these four classes, the industrial doctors were the first to feel the pinch of poverty. Working all day for a small salary, the industrial doctors had no opportunity to establish practices of their own. When the factories closed, the insurance companies no longer needed their services and the unfortunate industrial physicians found themselves stranded with no means of support.

The next group to suffer were the family doctors whose practice was limited to the very poor. Then followed the eminent professors. Much of their work was referred to them by other doctors. That source was bankrupt. Their rich clients had lost their money and could no longer pay large fees. The depression caught the eminent professors with heavy living expenses and a vanished business. Many of them ceased to confine their work to their chosen specialty and again became family doctors.

The second group, the family doctors who numbered their clients among the middle class, were the most fortunate of all. Their incomes also were greatly reduced, but they were able to pay office rent and take care of their patients.

The medical profession did not desert the public, but willingly and cheerfully extended credit, though the doctors themselves were sorely beset to meet their own financial obligations. The greatest hardship fell upon those people in need of surgical treatment which could not be given at the patient's home. "The doctor could wait," but the hospital must be paid. The expense of running a hospital is continuous and appalling. If the patients do not pay, the hospital must close its doors for want of funds.

Economic readjustment is slowly gaining ground. The public is beginning to understand that there are certain classes of people who will never learn to be self-supporting. They are, at the best, able to perform only the most arduous and simple tasks. The world owes them a living when there is no work for them to perform or when illness and age render them helpless. The great and pressing problem before us is how to remove from relief rolls those people who, because of indolence or lack of pride, are content to continue as wards of the government.

With widespread knowledge of a bad situation comes a combined attempt to remedy it. A way will be found, but no one is wise enough to predict what that way will be.

2800 Milwaukee Avenue.

NOTES AND ABSTRACTS

What's Wrong?

THE social structure of our body politic is being termited with a conglomerated, mongrel mess of malignant, vicious and dangerous immaturity—an immaturity that wrecks governments and destroys civilizations—an immaturity that is physical, mental, moral, religious, social, educational, political.

An immaturity that comes from an unfit parent stock—from children reared in poor environments, who, with an inadequate training and discipline, are neither taught to dig in the ground and work with their hands nor instructed in the virtues of honesty, truthfulness, mercy and justice, but who are subject to an improper and forced education which seeks to lift them out of that which they could do into that which they cannot be fitted to do, thus causing them to become misfits, discouraged and discontented.

In our system of education we disregard the fact that it is not all grist that comes to the mill, though it is processed the same, and the majority of the human family are born hewers of woods and drawers of water and must depend upon the leaders of society for direction and guidance, so that they may get the greatest return for their effort.

The immature soon learn the power of the ballot and their privilege at the polls. An election is the time when the immature feel their importance with an authority equal to that of the greatest and rarely fail to make use of it. They look upon an election as children upon a game of chance, with nothing at stake except a desire to win. On the other hand, many of our finest citizens, who know what is best and are acquainted with the methods by which it may be secured, are apt to be indifferent and negligent in exercising their franchise. Indeed many of our best citizens are not sufficiently interested in the welfare of their government to make an effort to go to the polls or to use their influence in the enactment and enforcement of just and beneficial laws.

The immature are at the mercy of the crooks and rotten politicians, who use them in foisting their own crooked and corrupt politics upon the public. The immature are apt to develop a pompous ego and a mistaken idea that, regardless of what they may do, the world owes them a living. This pompous ego and mistaken idea in an immature individual is very much like an echo which continually reverberates and resounds in that empty, spheroidal shell which, like a

knob, is attached to the upper end of his spinal column and from which flows freely another erroneous idea, expressed in that oft repeated phrase, "I am as good as you are."

A remedy can be found only in scientific and social control of reproduction. Birth-control information should constitute a part of our educational program and governmental policies and should be widely disseminated, with the aim of reaching all classes of the people.

Reproduction should be restricted to those who, by simple but ample tests, can show that they are physically, mentally and morally fitted for such responsibility. Moreover, children should be reared in the best of circumstances, so that they may be properly trained and disciplined. This leads to the suggestion that the country, with its open spaces, its out-door life, its closeness to nature and its opportunities to dig in the earth, is a most favorable environment for the raising of children.

J. A. MITCHELL, M.D.

Tullahoma, Tenn.

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Marriage and Partnerships

THERE are but two arrangements by which a marriage, or any other partnership, can be maintained in peace: There must be a master and a willing subject, or the partners in voluntary union must be equally and absolutely free.

The second arrangement is customary in America, but more in theory than in practice.

It is true that a marriage of two free people imposes many obligations and duties and restraints, but these are imposed by conscience, good sportsmanship, a sense of justice and the unselfishness of love. They are voluntary—imposed by each partner on himself, never by one on the other.

That is the ideal union, in which love gives all that love could ask—and gives it without the asking. But the unhappily married, not understanding the nature of their bond, sacrifice love to obtain mastery.

The tragedy is that neither is content to have his own way, but insists that the other shall have that way, also.

It is the desire to correct and remake one another that engenders bitterness, and it leads inevitably to shameful subjection or endless conflict.—ROBERT QUILLEN, in *Fountain Inn Tribune*.

THE SEMINAR

"A MONTHLY POSTGRADUATE COURSE"

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.)

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)

Problem No. 7 (Obstetric)

Presented by Dr. W. A. Newman Dorland,
Chicago, Ill.

(See CLIN. MED. & SURG., July, 1935, p. 359)

RECAPITULATION: A woman 38 years old, who had had three normal labors, the youngest child being four years old, had missed four menstrual periods, but presented no other symptoms or signs.

Suddenly, one night, she had a profuse, painless uterine hemorrhage.

Examination showed the fundus at the umbilicus, smooth, not tender; no fetal heartbeats nor movements; no fetal parts could be felt; cervix soft, but not patulous.

Requirements: (1) What is the probable condition? (2) What treatment is indicated?

Discussion by Dr. D. H. Nusbaum,
Jackson, Minn.

I should consider this a case of interrupted pregnancy, with hemorrhage, but no expulsive pain to empty the uterus, now over-distended with retained blood, placenta and fetus.

The treatment, in my opinion, is, first, to allow nature to take its course, but keep in touch with the case, watching for any untoward symptoms and giving such medical treatment as is found necessary. If necessary, empty the uterus.

Discussion by Dr. E. C. Junger,
Soldier, Ia.

Problem No. 7 (Obstetric) seems to be clear-cut and obvious. A woman of 38, with 3 healthy children and no previous pathosis connected with confinements, would suggest a normal pelvis; but no pregnancy for 4 years also suggests a uterine cavity not 100 percent normal.

Missing 3 or 4 menstrual periods means a pregnancy in this case, but the abnormal uterus would predispose to faulty implantation of the ovum in the lower segment. A hemorrhage without warning and no pain must come from a detached placenta.

Diagnosis: Placenta previa, probably with a dead fetus.

Treatment: Hospitalization; calcium gluconate; possibly transfusion and emptying of the uterus. Raise the blood coagulation period, if time permits, while waiting to intervene.

Discussion by Dr. Geo. B. Lake,
Waukegan, Ill.

This brief history strongly suggests some abnormal type of pregnancy. The uterus, four months after conception, should not reach as high as the umbilicus. With a uterus of this size, fetal movements and heartbeats should be observable, if it were alive, and parts should be palpable even if it were dead. If there were time, a roentgenogram would settle the question; but if the hemorrhage was continuing this would have been out of the question.

Dr. Junger's suggestions as to treatment are sound, whether this was a threatened spontaneous abortion at the fourth or fifth month, with a dead fetus (against which were the facts that the woman had no expulsive pains and that the os was not patulous), or an abnormal pregnancy. The woman should be hospitalized and the uterus emptied without undue delay.

Solution by Dr. Dorland

Three possible conditions naturally occur to the obstetrician: A threatened miscarriage at the fourth month; a placenta previa with central or marginal implantation of the placenta; and premature separation of the placenta (ablatio placentae). In the case of a miscarriage, the hemorrhage would soon be followed by uterine cramps and beginning dilation of the os. Central placenta previa would show a degree of cervical dilation through which the placental tissue could be felt. Ablatio placentae would be accompanied by all the manifestations of shock. Pain, cervical dilation and shock were all absent in this case.

It was, therefore, determined to await further developments. Signs of hemorrhage

recurring, evacuation of the uterine contents was decided upon. Under ether anesthesia, the cervix was dilated, by the dilator and the fingers, and a quart or more of a whitish, sago-like material was removed. There were no fragments of fetal or placental tissues. It was a case of that rare condition, cystic disease of the chorionic villi, commonly known as *hydatidiform mole*.

Problem No. 9 (Diagnostic and Ethical)

Presented by Dr. M. O. Robertson,
Bedford, Ind.

THE owner of a rented farm asked me to see his tenant, who had been ill for several months and under the care of another doctor. I telephoned to the attending physician and asked him to meet me at the patient's house, but he was busy at the time and asked me to see the man and give him my opinion. He thought there was some malignant condition in the abdomen.

The patient was a man 50 years old, with a history of vague abdominal symptoms lasting several months. He had consulted several physicians, without relief. Ten days previously he had an attack of acute abdominal pain and called a physician, who called a con-

sultant. The principal feature of the treatment agreed upon was frequent purgation.

Examination: The temperature was 101°F.; pulse, 90; vomiting was frequent; abdominal rigidity was not marked, but was easily noted; a definite mass was palpated in the lower right abdominal quadrant.

I stopped the purgation: advised that nothing be given by mouth until the vomiting stopped; said as little as possible to the family and the landlord; and promptly informed the attending physician, by telephone, of my findings, diagnosis and suggestions. The next day he informed me that the patient was much better (because the vomiting had stopped) and that he had resumed the purgation.

A few days later the attendant called me in consultation. The patient was vomiting every time he took anything (even water) into his stomach; the mass had disappeared, but not the rigidity; there was little change in the pulse and temperature. We could not agree on the diagnosis, but did agree to take the patient to a local hospital where, after a time, he died.

Requirements: (1) What was the probable diagnosis? (2) What should I have done, under the circumstances, on discovering what I believed to be an acute condition which had not been found by the attending physicians, and which I felt he was mistreating?

SURGERY OF THE THORAX

Be sure that you are feeling the same rib on both sides of the injury when trying to diagnose fracture.

Never mind about the crepitus if the other signs are present; treat as a fracture—if legal sequelae are likely, use the x-rays.

The sound side of the patient is the splint, and the adhesive swathe is the bandage.

An adhesive swathe that does not go at least two-thirds around the chest does very little good.

Never allow a swathe or bandage of any kind to remain around the chest if the patient is not made more comfortable by it.

Surgical emphysema is treated by closing the wound in the chest wall, and then treating symptoms as they arise.

Patients with emphysema and bronchitis bear chest wounds badly—do not leave on adhesive or plaster of Paris in such cases, unless benefit is at once apparent.

Give no opium preparation in injuries of the chest if the sputum is thick and tenacious—rather give an expectorant and whisky.

Old patients are often made much more comfortable by lying on the injured side, but too long in one position begets pneumonia.—DR. AUGUSTUS C. BERNAYS, in "Golden Rules of Surgery."

CLINICAL NOTES and ABSTRACTS

Pain from One-Sided Muscular Effort

AMBIDEXTROUS people generally have few physical complaints resulting from muscle strain. Engaging in a new occupation to which the patient is not accustomed is likely to cause him to call upon the doctor.

A musician came to my office last winter complaining of "rheumatism" in his back. He was asked if he had been shoveling snow, replying that he had. When questioned about it he stated that he did his work right-handed. He was advised that, when exerting himself in any kind of manual labor, he should go about it left-handed as much as he did right-handed. In two weeks he returned informing me that he had followed my advice and was wholly relieved of his discomfort.

Two months ago a young woman came to me complaining of pain in her back. In questioning her about the nature of her work she informed me that she had a garden of several acres, in which she often hoed all day, always right-handed. She was advised to work in a left-handed manner as much as she did in her customary way, even though it might be awkward for her at first. In ten days she returned to inform me that my advice to her had been followed, resulting in complete relief from her complaint. "Rheumatism" was what she complained about, and it had not occurred to her that her manner of going about her work had anything to do with it.

Pain from one-sided muscular effort often is not inquired into by the physician nor thought of by the patient. Pain anywhere, to many patients, is "rheumatism." A patient who had eaten a large cucumber exclaimed that he "jest had a terrible rheumatiz in his stomach." A sign painter, who had been treated by a number of physicians over a period of six years, for pain in the occipital region, did much of his work looking up. His pain disappeared when he rearranged his working position. There appear to be innumerable ways in which nearly everyone is likely to develop the muscles of one side of his body, to his detriment, and which could be avoided, and often would be, if only he were reminded of it.

I have found that, when employed in my own garden, if I work left-handed as much as I do right-handed, I can continue my

efforts for a longer time without fatigue. Unquestionably the osteopath and the chiropractor receive considerable patronage from sufferers because of these one-sided strains, and for similar reasons much medicine also has been taken in efforts to obtain relief. It appears reasonable to suppose that an optimum degree of health is more easily maintained when the muscles of one side of the body are not developed to a greater extent than their fellow organs.

Complaints caused by one-sided muscular efforts will probably become more common as vocations and industry become more specialized. In some respects, however, modern machines have brought relief. The hay loader, now commonly used on the farm, has eliminated much of the so-called rheumatism formerly caused by lifting with hand forks. A more universal use of typewriters has greatly eliminated complaints from writer's cramp. In water and rail transportation, self-stokers are gradually relieving the arduous dextral or sinistral efforts of firemen, though the gasoline-driven vehicle is causing complaints in increasing numbers from drivers who travel long distances regularly.

At the central division points throughout the states we hear much complaint from automobile and truck drivers because of pain in the sacrovertebral region. The fixed position and the constant tension of the right leg and foot in controlling the speed of the vehicle appears to be responsible for much of this pain suffered by drivers. Unfortunately, being ambidextrous does not help the situation here as it does in some other occupations. The left foot cannot be used to manipulate the accelerator.

I have been impressed by the fact that the cause of regional distress is so frequently not revealed when caused by muscle strain incident in various occupations. Even though patients experience relief from their suffering by becoming more ambidextrous in their work or by change of occupation, obviously we should not lose sight of the fact that a lack of physical vigor also may be a contributing factor.

FRANK G. MURPHY, M.D.

Mason City, Ia.

A Religio-Physiologic Controversy

ONE of the striking and outstanding features of the present time is the rapprochement of science and metaphysics. No longer are religion and science antagonistic. On the contrary, they are overlapping and cooperative, mutually respecting one another. This satisfactory state, which has been termed "modernism" in science, has been brought about largely through the recognition by the scientists of the orderly and systematic regulation of the cosmos in all of its phases, astronomical, mathematical and physical, and the appreciation of the fact that such a beautiful system and order could be the result only of a conscious supervision and adaptation of things.

Of course, this does not mean that all the perplexing questions have been satisfactorily settled. Far from it! There are many, very many, problems that are open to controversy and difference of opinion, the solutions of which lie far in the dim future, with the possibility that some of them may never be settled this side of the boundary line between time and eternity.

One of these seemingly insoluble problems is the relationship existing between the body and the soul, whatever the latter term may mean to the minds of the scientific thinkers. This question has been revived recently by the very interesting and startling experiments of Dr. Robert E. Cornish, of Berkley, California.

The Berkley scientist, who has revived apparently dead dogs with, at least, partial success, has asked for permission to endeavor to restore life to convicts executed in the lethal gas chamber of Colorado. At once the question arose among religionists as to whether a seemingly dead man brought back to life would be a person without a soul; that is, whether there would be merely a physical resuscitation, with the spiritual essence lost or omitted.

It is not our province to argue or side with or against the differing views of various theological sects, Protestant, Catholic and Jewish. It is interesting, however, to note the diversity of these views. For instance, one religionist cited the instances of resurrection of dead persons as recorded in the Bible as proof that a person brought back to life would have a soul. Another argued that these instances should be excepted, as miracles performed by divine power, and that no ordinary mortal would be able to bring back the soul which "leaves the body at the moment of death, not

to be readmitted until judgment day." Other clergymen claimed that "it would be impossible to bring back even mechanical life if one really were dead; but if one were medically dead, it would be possible to revive him"; in other words, that such cases are in reality cases of suspended animation and not actual dissolution.

As to the actual resuscitation of dead bodies, we take the ground that this is impossible. How long animation can be suspended without death occurring, or the final separation of the soul and body, is not definitely known. It must be admitted that in every case in which such a resuscitation has been noted, excluding from the argument the Biblical miraculous cases, actual death has not occurred. Therefore, such a resuscitated body would have his conscious personality retained, with all his memories of past events and all his ability to think, reason and hope, as before the apparent death occurred. It is impossible to conceive of a living resuscitated body without these mental and moral aspects of the individual's nature persisting. A soulless, egoless body would be as impossible to conceive of as would be a Frankenstein monster, a robot, or other moral monstrosity of human creation or imagination.

But cats and dogs will play, and man will continue to expend his mental energy in assuming impossible or hypothetic conditions and arguing for or against these mental concepts. The only real question is, what does it all avail? or, in the language of the street, where does it get one?

It may be put down, we maintain, that in no instance can an actually dead body be resuscitated, and that the final separation of the body and soul cannot occur until physical dissolution has been accomplished.

W. A. NEWMAN DORLAND, M.D.

Muscle Extracts in Obliterative Arterial Disease*

IN the late stages of the obliterative arterial diseases—thrombo-angiitis obliterans, Buerger's disease, Raynaud's disease, incipient diabetic gangrene, etc.—of which intermittent claudication is a relatively early symptom, the treatment, a few years ago (and largely even today), was amputation.

Results with the use of muscle extracts, given hypodermically, intramuscularly, or even by mouth, indicate that, in many, if not most such cases, the affected limbs can be saved and the condition permanently cured

*Lancet (Lond.), June 1, 1935.

(collateral circulation established) by the regular administration of these extracts over a period of a number of months.

On the basis of present knowledge, any physician who sees such cases should give this method a trial before recommending amputation.

M. SCHWARTZMAN, M.B.

London, Eng.

Look for **THE LEISURE HOUR** among the advertising pages at the back.

Early Diagnosis of Ectopic Pregnancy*

BEFORE the day of modern surgery, the victim of misplaced pregnancies usually died of internal hemorrhage or, if bleeding were very moderate, lived to absorb the clot and to dispose of the product of conception by absorption, disintegration, encapsulation or lithopedion formation.

Mortality would be negligible if diagnosis could invariably be established early.

Symptoms rarely occur in the absence of disturbed menstrual function—usually an irregular appearance of dark, non-clotting blood. After this peculiar bleeding, colicky pains may appear toward the end of the second month. The usual subjective signs of pregnancy are more often absent during the first 8 weeks. Symptoms are more marked in tubal rupture than in tubal abortion. In the former, trauma is greater and hemorrhage more profuse. The nearer the rupture is to the uterus, the greater the hemorrhage. The pain may be excruciating. There are also signs and symptoms of hemorrhage. Vomiting is frequent and usually synchronous with the exacerbation of pain. Pain in the shoulder, commonly the right one, and supra-clavicular pain are not rare. Occasionally these cases present intense lancinating pain in the rectum and urgency to stool.

The chief conditions to be differentiated from ectopic pregnancy are appendicitis, threatened uterine abortion or an incomplete abortion, chronic salpingitis, pain of ovarian origin, acute abdominal catastrophes, such as a ruptured viscus, and bleeding from a retroverted uterus. It is well to remember that any of these events may occur even before the missing of a menstrual period. Thus when a woman in the child-bearing period suddenly collapses and presents evidence of hemorrhage, early operation will save a number of lives otherwise doomed.

In the differential diagnosis of pelvic pathoses, ectopic gestation should always be considered. This done, fewer of these patients

will be sacrificed. There should be no compunction in opening an abdomen, even if doubt prevails. Regrets will be rare when celiotomy is performed purely on the strength of strong suspicion.

DOUGLAS W. MACOMBER, M.D.

Denver, Colo.

The Non-Drainage Treatment of Peritonitis*

WE are prone to forget that, before the present era of abdominal surgery, many patients recovered from peritonitis without operation. Accordingly, we cannot too strongly emphasize the vital importance of understanding when drainage is necessary. Indiscriminate omission of drains would only add to the tragedies of appendicitis, already so prevalent in this country.

It has been shown to be impossible to drain the general peritoneal cavity by any means whatsoever.

In the absence of catharsis, infection rarely reaches all parts of the peritoneum before being walled off. Truly generalized peritonitis is comparatively rare and usually fatal.

Death from peritonitis, *per se*, without operation, is almost always death from overwhelming toxemia. Intestinal paralysis and stasis are not important factors. On the contrary, after operation with drainage, ileus is probably the most frequent cause of death.

In all types of peritonitis except that due to tuberculosis, early removal of the source of infection should be and usually can be effected.

Purulent and badly contaminated fluid exudate should be removed, preferably with a Pool suction tube, to lessen absorption.

The subperitoneal tissues are no more resistant to infection than are connective tissues elsewhere. Endothelium must be preserved by avoidance of rough sponging and dry packs.

Drainage is necessary in: (1) Retroperitoneal infections; (2) localized abscess with doubtful integrity of the peritoneal lining; (3) peritonitis with uncontrollable oozing of blood.

The more widespread the peritonitis, the less the indication for drains. The skin incision should be left wide open and loosely packed with "B.I.P." gauze, until subcutaneous fat and fascia appear clean. If muscles are sutured, interrupted sutures, loosely tied, should be used, with a drain to the peritoneal space.

Fever after forty-eight hours is usually due to infection of the abdominal wall. If an intra-abdominal abscess forms it should be allowed to localize and become palpable before being drained.

**Colorado Med.*, Apr., 1935.

**N. Y. St. J. of M.*, Jan., 1935.

It is demonstrated that non-drainage reduces the danger of postoperative obstruction, perforations and adhesions. It gives a lower mortality, lessens suffering and shortens convalescence.

G. W. COTTIS, M.D., F.A.C.S.,
and H. W. INGHAM, M.D.

Jamestown, N. Y.

Look for FACTS AND COMMENTS among
the advertising pages at the back.

An Attempt to Rationalize Hydrochloric Acid Therapy*

It seems to be the opinion of those who are employing the hydrochloric acid therapy that its therapeutic efficiency is due to an effect upon the systemic acid-alkali balance." (Dr. Guy, March issue, *Medical World*.)

But in the same issue appeared the statement that, in a series of cases of gastric hyperacidity, the patients were improved by injections of acid which, theoretically, was contraindicated. As a matter of fact, HCl, in amounts less than that required to hemolyze the blood, has but a slight and very transitory effect upon blood pH, and in the concentrations used by the exponents of HCl therapy it has absolutely no discernible effect, even when measured with a galvanometer sensitive to 1/2000 of a degree on the pH scale.

The remarkable stability of systemic pH is well illustrated by experiments conducted at Santa Barbara, Calif., in 1933. It was found that from 15 to 20 grams of ammonium chloride must be ingested in order to lower the blood pH 2/10 of 1 degree, and that the daily administration of 45 grams (1½ oz.) of sodium bicarbonate was necessary to change the reaction of the blood to a similar extent in the opposite direction. It was ascertained that it would require 18 pounds of oranges to produce an alkaline ash content equal to 40 grams of sodium bicarbonate, and 4 pounds of lean beef to produce acid ash equivalent to 15 Gm. of ammonium chloride. The ingestion of other mineral bases and both organic and inorganic acids, in amounts far beyond those used medicinally, all failed to materially affect the systemic pH.

Carbonic acid is the only acid ever found free in the blood in health, and this is the only acid that can alter blood pH without destroying it. The amount of carbonic acid present in the blood is not governed by diet or medication, but by the rate and character of respiration. This is very convincingly set forth in an article on "Asphyxia," by Yandell Henderson, in the *J. A. M. A.*, July 22, 1933.

**Med. World*, May, 1935.

In this article the fallacy of the "acidosis" theory is illustrated by citation of the fact that carbon dioxide is being successfully used in treating carbon monoxide poisoning, diabetic coma, asphyxia neonatorum and other so-called acidoses.

All organs of vital function and nearly all the tissues of the body are cellular in structure, and if life and health be maintained there must be an optimum osmotic interchange of fluid between the intercellular and intracellular spaces. Either too much or too little cell-membrane permeability is pathogenic.

Arrhenius taught us that salts, acids and alkalies, in solution, are separated into their component parts and exist as ions, and Henderson, of Yale, in 1928, applied this conception to physiology by proving that the balance between acid and alkali (pH) in the blood is due to the exchange of H and OH ions between carbonic acid and the alkaline bicarbonates. Thus we find that the acid-base balance of the blood is not influenced so much by the quality of acid or alkaline substances in or available to the blood as it is by the degree of their ionic dissociation.

Chemically considered, hydrochloric acid, U.S.P., is a solution of from 31 to 33 percent of hydrogen chloride in water. In this concentration, 90 percent of the hydrogen chloride exists as HCl and 10 percent as H-OH-Cl ions. In a dilution of one part of hydrogen chloride in 1,500 parts of water, 2 percent exists as HCl and 98 percent as H-OH-Cl ions. In other words, it is almost completely ionized.

Life and health depend very largely upon metabolic processes which change proteins from one form to another. In relation to pH there are three types of proteins; acid (positive), alkaline (negative) and amphoteric.

Only negative proteins will react and combine with HCl; but when HCl+H₂O is ionized into H-OH-Cl, negative proteins react with H ions, amphoteric proteins react with OH ions, and positive proteins react with Cl ions. Hence we can conceive that an attenuated solution of HCl, introduced into the bloodstream as H-OH-Cl ions, may quite enormously increase the rate of metabolism and therefore greatly alter the quality and quantity of osmotic interchange between intercellular and intracellular areas. Perhaps in such an energizing of a fundamental vital process we can read the riddle of HCl therapy.

A. M. ALLEN, M.D.

St. Louis, Mo.

I find CLIN. MED. & SURG. very useful for everyday practice.—R. D. W., M.D., Pa.

Treatment of Heart Failure by Oxygen*

THE treatment of various forms of heart failure by continuous oxygen therapy has been intensively studied at the Presbyterian Hospital during the past four years. The results of these investigations support the view that effective oxygen therapy plays an important rôle in the treatment of certain cardiac disorders.

The oxygen chamber, a ventilated oxygen tent and the nasal catheter are the three methods which seem suitable for continuous use in the treatment of the various forms of heart disease. The oxygen chamber may be of the fixed type, with an external circulation accomplished by motor blower units and ducts, or of the thermal circulation type, as used in our hospital. These installations are expensive to install and their upkeep is approximately twice that of the tent. I have used an inexpensive, transportable oxygen chamber, which consists simply of an enlarged oxygen tent made of rubberized fabric. There is no question that patients can be made exceptionally comfortable in an oxygen room and, indeed, almost unaware that oxygen treatment is being carried out. Concentrations of 50 percent oxygen in the atmosphere are generally employed.

Each case deserves a special rating of his oxygen requirement, but in most cases 50 percent oxygen will be found to increase substantially the amount of oxygen in his arterial blood to or near the normal level. In some patients, higher concentrations may be advisable for short periods, if the anoxemia is severe. Evans has advocated 100 percent oxygen continuously as being more capable of raising the oxygen saturation to the normal, and for short periods this may be a safe and desirable procedure. The danger of oxygen poisoning, resulting in pulmonary edema, which regularly occurs in animals exposed to concentrations of oxygen over 80 percent for from 2 to 4 days, should be a sufficient warning to prohibit the employment of 100 percent oxygen in human beings for similar periods.

The use of oxygen in the treatment of congestive failure is attended with beneficial results, especially in those cases characterized by an arteriosclerotic etiology, either in the myocardium or in the coronary artery. A restoration of compensation may be accomplished in severely decompensated patients as well as in those with impending cardiac break-down.

The employment of oxygen therapy in acute coronary thrombosis has been found to be capable of sustaining the function of the circulation and the secondarily involved res-

piration in certain cases, in that way tiding the patient over a critical period. Acute cardiac failure in other conditions, such as lobar and bronchopneumonia, is also an indication for oxygen therapy.

In the preparation of cases of congestive failure and angina pectoris for thyroidectomy, it was found that oxygen treatment before, during and after the operation, was attended by an exceptionally smooth operative course. This procedure might therefore be employed in other serious operations on patients with heart disease.

There is no indication for the use of 5 to 7 percent carbon dioxide in oxygen in the routine treatment of pneumonia or cardiac failure. An uncomfortable and excessive dyspnea is produced, without reason to expect benefit. Concentrations of 1 to 2 percent carbon dioxide, which are built up in oxygen tents without soda-lime, appear to be without harm and are possibly of benefit. Higher concentrations of carbon dioxide should be reserved for conditions such as atelectasis of the newborn, or those in which the respiratory center has become insensitive, such as carbon monoxide poisoning and submersion.

The characteristic accompaniment to improvement in the symptoms of cardiac failure as a result of oxygen treatment is a marked rise in the carbon dioxide content of the arterial blood. This increased arterial carbon dioxide content follows a diminution in pulmonary ventilation, without alteration in the pH of the blood, and declines when the need for oxygen is no longer present. The usefulness of a high carbon dioxide content in the arterial blood and in the alveolar air, is a high elimination of carbon dioxide per unit of breathing. The dyspnea of congestive failure cannot, therefore, be thought of as a primary disability of getting rid of carbon dioxide through engorged or edematous lung tissue, as very large concentrations are passed through markedly damaged pulmonary epithelium, if the needs of the organism for oxygen are met.

ALVIN L. BARACH, M.D.

New York, N. Y.

Treatment of Tetanus*

THE successful treatment of tetanus depends upon the four S's—sedation, serotherapy, surgery and support.

Sedation consists in giving the necessary doses, repeated as required, of such drugs as: the barbiturates (phenobarbital, Nembutal, Sodium Amytal, etc.), morphine, chloral hydrate, paraldehyde, Avertin Fluid, etc.

Serotherapy is the administration of tetanus antitoxin early, in doses of 20,000 to 80,000

**Anesth. and Analg.*, Mar.-Apr., 1935.

**J. A. M. A.*, Jan. 19, 1935.

units (up to a total of 300,000 units), intramuscularly or intravenously—not intraspinally. (It is better to give a prophylactic dose of 1,500 units immediately after all compound fractures, gunshot wounds, deep punctures and street and farm wounds, and to repeat this dose once or twice, at intervals of 10 days, in all particularly suspicious cases.)

Surgery means debridement and the wide opening of deep wounds, where one can get at them.

Support means keeping up the nutrition and maintaining the fluid balance, with other measures calculated to maintain the general resistance.

It is unnecessary to give tetanus antitoxin after ordinary wounds occurring in the home, in clean places or while bathing or swimming at the shore.

DRS. R. H. MILLER and H. ROGERS.
Boston, Mass.

Cardiac Hormones in Angina Pectoris*

IF the cardiac hormones possess the qualities attributed to them, they will change, not only the entire chapter upon cardiovascular physiology, but will perforce change completely the conception of the pathologic physiology of angina pectoris accepted by many cardiologists, as well as that of hypertension.

While the chemistry of these extracts is not settled, it seems to be the unanimous opinion of clinicians that the extracts of skeletal muscles and Padutin are of great value in the treatment of certain types of angina pectoris and intermittent claudication. In various Continental clinics I saw cases under the combined treatment of Lacarnol (Myorgal) internally and Padutin intravenously. Since my return, in September, 1933, I have used the two substances (Myorgal and Padutin) in the treatment of angina pectoris. Myorgal was given in doses of 30 drops after each meal; Padutin was administered intravenously, 1 cc. each day, for periods of from thirty to sixty days, depending upon the alleviation of the symptoms.

Of the 21 cases treated, 17 were instances of angina pectoris of effort, and of these 13 were completely relieved of the angina and the associated symptoms. When the symptoms disappeared the patient was placed upon graduated exercise in the way of walking. He was instructed to walk two blocks the first day, and to increase two blocks each day until he walked approximately sixty blocks a day. At this point the treatment was discontinued and the patient advised to continue the walks throughout the remainder of his life.

If there is anything in the hypothesis that

there is produced in the skeletal muscle during exercise a substance capable of dilating the coronary arteries, it would appear that graduated and sustained exercise is absolutely essential in the treatment of those cases of angina pectoris of effort not associated with aortic atheromatosis, coronary sclerosis or fibrotic myocardial changes. It would seem that in such cases the careful use of Myorgal and Padutin, accompanied by supervised and graduated exercise, we have a method of treatment which offers a distinct advance beyond anything which has been offered previously and which eventually will lead to a complete relief in this most distressing malady.

J. CURTIS LYTER, M.D.

St. Louis, Mo.

Sodium Formaldehyde Sulphoxylate In Acute Mercury Poisoning*

FROM a considerable amount of experimental work on animals poisoned by mouth with mercuric chloride, it is my belief that the best results from therapy with sodium formaldehyde sulphoxylate can only be obtained by both oral and intravenous administration of the drug. On the basis of rabbit experiments, the technic suggested for the treatment of bichloride poisoning in human adults is as follows:

1.—Gastric lavage with a 5-percent solution of sulphoxylate, about 200 cc. being left in the stomach.

2.—Immediately following this, 10 Gm. of the drug, dissolved in 100 to 200 cc. of distilled water, is slowly injected intravenously, from twenty to thirty minutes being permitted for the injection.

3.—In severe cases the intravenous injection is repeated in from four to six hours following the completion of the first injection, from 5 to 10 Gm. being injected.

4.—If colitis develops later, high colonic irrigations should be given with a 1:1,000 solution of sulphoxylate.

In 25 cases treated according to these instructions, no evidence of toxic effects was noted. Reports from other clinics show that approximately an equal number of cases have been similarly treated without untoward results. In order to diminish the likelihood of toxic reactions, the suggestion of Kolmer and Brown is being followed to the extent of limiting the second intravenous injection, when given, to 0.1 Gm. per kilogram, or a total dose of 5 Gm. to an adult of average weight. It is suggested that this injection be given at an interval of six hours after the completion of the first. Early treatment is of great importance.

SANFORD M. ROSENTHAL, M.D.

Washington, D. C.

*J. Missouri M. A., Apr., 1935.

*J. Pharm. & Exp. Therap., May, 1935.

THUMBNAIL THERAPEUTICS

Barbiturates in Obstetrics

BARBITURATES can be given earlier in labor than any other drug with less effect on the baby. The most satisfactory barbiturate in obstetrics is pentobarbital sodium (Nembutal). If the rectal administration of oil and ether is combined with it, its possible tendency to cause excitement is avoided and its action is enhanced.—DR. CHARLES E. HUNT, Eugene, Ore., in *Northwest Med.*, June, 1935.

Drainage after Appendectomy

DRAINAGE, following operation for ruptured and gangrenous appendicitis, is unnecessary, since it does not subtract from the mortality but does add to the morbidity. A study of 100 cases demonstrates the comparative safety of closing the abdomen without drainage, following operation for acute suppurative appendicitis.—DRS. D. A. WILLIS and J. M. MORA, in *Am. J. of Surg.*, Mar., 1935.

Treatment of "Pink Eye"

ACUTE catarrhal conjunctivitis ("pink eye") is contagious only while the discharge is present.

First wash the eyes carefully with physiologic salt solution. If pneumococci are present (as is generally the case) apply a ½-percent solution of Butyn and follow it with a freshly-prepared 1-percent solution of ethylhydrocupreine hydrochloride, twice a day. If no pneumococci (or even in many pneumococcal cases), 1:2,500 Metaphen; 1:5,000 mercuric oxycyanide; or 1:1,500 acriflavine hydrochloride, without preliminary local anesthesia, may be used, four times a day, with good effect. In severe and prolonged cases, 2-percent silver nitrate or zinc chloride may be applied, after anesthesia with 2-percent Butyn.—DR. SANFORD R. GIFFORD, in *J. A. M. A.*, July 7, 1934.

The Advertisements are NEWS! Read and use them.

Keloid

RADIUM, applied to the wound over a piece of sterile gauze at the time of operation for keloid, will in most instances prevent recurrence of keloid formation.—IRA I. KAPLAN, B.Sc., M.D., in *Radiol. Rev.*, March, 1935.

Response to Endocrine Therapy

THE marked variations which are noted in the responses of different patients to endocrine therapy are due to five causes: (1) the endocrine nature of the condition (mistakes in diagnosis are sometimes made); (2) the accuracy and potency of the remedy used; (3) the size and arrangement of the doses; (4) the patient's powers of endocrine response; (5) the character and degree of coincidental toxemias. All of these factors should be considered in prescribing organotherapy.—DR. HENRY R. HARROWER, Glendale, Calif.

Inhalation Anesthesia by a Gravitational Method

THE method of producing anesthesia by pouring nitrous oxide gas into a celluloid inhaler open at both ends, as described in 1898 by Flux, an English anesthetist, is worthy of retrieval. The gas, heavier than air, sinks by gravity and on inspiration produces anesthesia. It provides an approach to the ideal for anesthetizing children, and is the safest of all methods for patients in a desperate condition.—A. H. MILLER, M.D., in *Anesth. & Analg.*, March-April, 1932.

Look for FACTS AND COMMENTS among the advertising pages at the back.

Immunotherapy

A REVIEW of the progress of specific therapy during the past 10 years calls attention to three important new methods of immunization, each depending upon a different principle. Inoculation with living, but attenuated, bacteria is represented in the use of the Calmette-Guérin bacillus, a method still in the experimental stage, but offering at least some hope of immunization against tuberculosis.

Inoculation with preparations of bacterial toxin has been shown to be capable of producing immunity to diphtheria and scarlet fever.

The injection of serum from recovered human cases can be used at will, either to prevent or to attenuate an attack of measles and possibly to modify the course of other infections.—DR. L. P. GARROD, in *Practitioner*, Lond., Oct., 1932.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Medical & Dental Arts Bldg., Waukegan, Ill., is accompanied by a check for the published price of the book.

The pleasures of reading deserve most careful cultivation.—LORD MAHON.

Banister: Psychology and Health

PSYCHOLOGY AND HEALTH. By H. Banister, M.Sc., Ph.D.; *Director of Psychological Studies in St. Johns College, Cambridge; Lecturer in Experimental Psychology in the University of Cambridge; Honorary Psychologist to Papworth Village Settlement.* New York: The Macmillan Company. 1935. Price, \$2.50.

"When a doctor first takes up general practice, he is struck by the fact that he seldom comes across a typical case. He finds that the typical case, the delight of textbooks and of examiners, does not exist outside the textbook and the examination hall. Each 'case' instead is an invalid, and each invalid differs from every other invalid, both in his physical and in his mental makeup, so that each individual requires individual treatment. Also, owing to the reciprocal action between the physical and the mental sides of the invalid, it is important that both sides should be recognized and that both sides should be treated."

If the doctor accepts this fact, as stated by the author in this book—and it is a statement that cannot easily be ignored by the up-to-date physician—he should be prepared to recognize both the mental and physical factors in the individual patient.

With this idea in mind, Dr. Banister has written an interesting and highly worth while book, discussing the psychologic aspects of the individual. In a language almost entirely devoid of technical terms, he presents the basic principles of psychologic diagnosis and procedure. It is not a textbook that will prepare one as a specialist in the field, for, obviously, it is a field in which, in order to be a specialist, one must be prepared to understand completely both the physical and psychologic characteristics of the individual.

However, the volume does present to the novice an understanding of the psychologic side of the individual, preparing him to recognize this, as well as the physical side of the invalid and, in so recognizing, enable the general practitioner to prescribe, either treatment by the specialist in severe cases, or to treat, himself, the majority of cases which are not so complicated as to deserve attention by the specialist.

The author has not become a convert to any particular psychologic cult or "religion," but, after studying Freud, Adler, Jung and others, has made a sound selection of the valuable

points in the teaching of each. He discusses, among other matters, the "problem child," infantile sexuality, anxiety states and other neuroses, in a sane manner, and gives reasonable outlines for the employment of hypnosis and other forms of suggestion, as well as other psychotherapeutic technics, in the management of those who are psychically ill, as well as of others whose chief or sole complaint is believed to be entirely physical.

It is scarcely conceivable that any intelligent physician could read this book at all carefully without becoming, in the process, a wiser, more capable and more successful clinician.

Cutting: Preoperative and Postoperative Treatment

PRINCIPLES OF PREOPERATIVE AND POSTOPERATIVE TREATMENT. By Reginald Alex Cutting, M.D., C.M., M.A., Ph.D., *Assistant Professor of Surgery, Louisiana State University Medical Center; Formerly Assistant Professor of Surgery, Tulane University Medical School, New Orleans.* Foreword by Rudolph Matas, New Orleans. With 76 Illustrations. New York: Paul B. Hoeber, Inc. 1935. Price, \$10.00.

With the adequate aseptic and anesthetic methods of today and the high plane of mechanical skill reached by most specializing surgeons, most operations are now safe for the patient, and the surgeon whose interest in his patient "starts with the knife and ends with the safety pin" is on the way to the scrap-heap. The aim of modern surgery is to make the patient safe for the operation. It is now as important to know *when* to operate as *how* to operate.

Here is the very book that thoughtful and forward-looking surgeons have been waiting for—a monograph setting forth the basic principles of the study and preparation of a patient before operation, his care after the operation, and the follow-up methods which every conscientious operator should employ.

Principles are chiefly stressed, because, if these are thoroughly understood, the details in any specific instance can readily be deduced; but such details are also given in many types of conditions, with illuminating illustrations to back them up.

Such important subjects as shock and col-

lapse, blood transfusion, water balance, "gas pains," urinary disturbances, pulmonary complications, and many others are fully discussed.

At the end of each chapter is a bibliography which, while not exhaustive, is ample to round out the subject, and most of the references are to books and articles in English.

Mechanically, the book is, like most of Hoeber's other offerings, a real joy. The paper is excellent; the type large and well-spaced, with ample margins; subject and author indexes make reference easy; and the binding is strong and beautiful.

While every specializing surgeon will need and want this volume, it is, perhaps, even more essential to the occasional operator, for it will, to a considerable degree, compensate for his lack of daily practice and familiarize him with many of the newer ideas and techniques with which his limited experience might fail to furnish him.

Harrison: Heart Failure

FAILURE OF THE CIRCULATION. By Tinsley Randolph Harrison, M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine, Nashville, Tennessee. Baltimore: The Williams & Wilkins Company. 1935. Price, \$4.50.

No one will ever know too much about diseases of the heart, and here is a book for those who are eager to know more about the physiologic, biochemic and hemodynamic factors which underlie failure of the circulation.

While various disorders of the heart are given some attention, and clinical suggestions appear here and there, this work is essentially a technical treatise on the bio-mechanics of congestive heart failure, written by and for research workers rather than clinicians. As a reference book it will be of great value to cardiologists, but only the exceptionally studious and enthusiastic general practitioner or medical student will get anything out of it that he can use in his daily work.

Newburgh and Mackinnon: Dietetics

THE PRACTICE OF DIETETICS. By L. H. Newburgh, M.D., Professor of Clinical Investigation, The Medical School, University of Michigan, Ann Arbor; and Frances Mackinnon, A.B., Dietitian, Diet Therapy Clinic, University Hospital, and Instructor, Department of Hygiene and Public Health, University of Michigan. New York: The Macmillan Company. 1934. Price, \$4.00.

In many cases health can be augmented and disease avoided, ameliorated or even cured by a proper diet. This volume explains whether, why and how these good results can be obtained.

The first part discusses the general physiology of foods and nutrition in a not-too-technical manner; the second part shows how to apply this knowledge to a particular patient and includes tables of food values and a few menus. There is a satisfactory index.

This is not a book for the specialist or researcher in nutrition, but a practical manual for general clinicians, medical students and dietitians; and such persons will find it decidedly helpful in their daily work.

Harrow and Sherwin: Biochemistry

TEXTBOOK OF BIOCHEMISTRY. Edited by Benjamin Harrow, Ph.D., Associate Professor of Chemistry, The City College, College of the City of New York; and Carl P. Sherwin, M.D., Sc.D., Dr.P.H., LL.D., Member of the Staff of St. Vincent's Hospital and French Hospital, New York City. Illustrated. Philadelphia and London: W. B. Saunders Company. 1935. Price, \$6.00.

This is an elaborate, detailed and decidedly technical symposium on modern biochemistry, by thirty chemists and biologists of note, only six of whom are physicians. It is intended for teachers and advanced students of chemistry, biology and medicine; but is too technical to be of any great value to the average general clinician.

Goldzieher: Clinical Endocrinology

PRACTICAL ENDOCRINOLOGY. Symptoms and Treatment. By Max A. Goldzieher, M.D., Endocrinologist, Gouverneur Hospital; Chief of Endocrine Clinic, Gouverneur and Brooklyn Women's Hospitals; Consultant Pathologist, Beth Moses, Crown Heights and Kingston Avenue Hospitals, Brooklyn, N. Y.; Former Professor of Pathology, Royal Hungarian University, Budapest. Illustrated. New York and London: D. Appleton-Century Company, Inc. 1935. Price, \$5.00.

Patients do not, as a rule, come to a physician with the statement that they are suffering from disease of the pituitary, gonads, parathyroid or some other endocrine gland. They come with a symptom or group of symptoms, and from these the clinician must determine whether or not the condition is of endocrine origin.

This book has been prepared strictly upon a clinical basis, the theoretical material being reduced to a minimum—only 40 pages of the 325 are devoted to the anatomy and physiology of the ductless glands. From there on, the author takes up the actual study of patients; first the general examination and then the symptoms appearing in various functions or organ-systems of the body, as disturbances of development and growth, of metabolism, of the digestive tract, of the nervous and psychic mechanisms, etc. In general, he says that some masked endocrine disorder should be suspected and searched for whenever the symptoms are out of proportion to the demonstrable disease states and when they do not respond to the ordinarily successful line of treatment. About 60 pages are devoted entirely to treatment.

Here is a book which will actually help the general clinician to make a diagnosis in most of the endocrine cases which come to him for treatment, and to do something for them or

refer them to an endocrinologist. He does not have to struggle through a maze of unproved theories or conflicting ideas. The only fault to find is that, perhaps, the pluriglandular nature of many endocrine disorders is not sufficiently stressed.

This is just the thing that many active practitioners have been looking for, and the sooner they get it, the better.

Bainton and Burstein: Electrocardiography

ILLUSTRATIVE ELECTROCARDIOGRAPHY. By the late Joseph H. Bainton, A.B., M.D., Formerly Attending Physician and Chief of the Cardiac Clinic, Morrisania City Hospital, New York, and Consulting Physician, St. John's Long Island City Hospital; and Julius Burstein, M.D., Associate Electrocardiographer, Morrisania City Hospital, and Cardiologist to St. Elizabeth Hospital, New York. New York and London: D. Appleton-Century Company. 1935. Price, \$5.00.

Most physicians realize that, today, the electrocardiograph is an important or even essential part of the study of any or all of the heart disorders which are so widely prevalent; but ninety percent of clinicians have the idea that these records are as mysterious as the Ebers papyrus or the Rosetta stone, and hence do not make use of them nearly so frequently as they should.

This is an atlas of electrocardiography; and it is safe to say that any intelligent medical man who will study it sincerely and diligently for a dozen hours or more, will be able to get as much sense out of an electrocardiogram as he does out of a report of a urinalysis or a blood-cell count. Here is a real post-graduate course in an important subject, which can be pursued at home, at the price of a box of good cigars.

Beginning with the fundamentals and normal pictures and proceeding systematically through the various cardiac pathoses, reproductions of typical electrocardiograms appear upon the right-hand pages, with detailed descriptions and interpretations of them on the opposite pages. For graphic instructions, this method cannot be surpassed.

Every physician who treats heart cases (and that means most of them) needs this book.

Jagic and Flaum: Treatment of Heart Diseases

THERAPIE DER HERZKRANKHEITEN (Therapy of Diseases of the Heart.) By Prof. Dr. N. von Jagic, Director of the II. University Clinic of Vienna, and Dr. Ernest Flaum, Assistant at the Clinic. 331 pages, with 13 illustrations. Berlin and Vienna: Urban and Schwarzenberg. 1935. Price, paper cover, Mk.10.50; bound, Mk.12.

This volume is a serious attempt critically to present the entire therapeutic armamentarium for all known heart diseases. In the general part the authors discuss rest and exercise (sports), sleep, nutrition, beverages and tobacco. The entire range of drugs—and

there are many—is grouped according to therapeutic effects in a general way. In the second, special, part the treatment of individual diseases is discussed from a purely clinical point of view. A section is devoted to the treatment of heart diseases of women, another to the treatment of the heart in acute infectious diseases and in surgical conditions. A section on digitalis prophylaxis concludes the volume. An excellent index facilitates search for any desired subject. Paper and print leave nothing to be desired. All in all, a valuable book.

G. M. B.

Dorland: American Medical Dictionary

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc., with the Pronunciation, Derivation, and Definition. By W. A. Newman Dorland, A.M., M.D., F.A.C.S., Lieut.-Colonel, M.R.C., U. S. Army, Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association; Editor of "American Pocket Medical Dictionary." Seventeenth Edition, Revised and Enlarged with 945 Illustrations, including 283 portraits. With the Collaboration of E. C. L. Miller, M.D., Medical College of Virginia. Philadelphia and London: W. B. Saunders Company. 1935. Price, plain, \$7.00; thumb index, \$7.50.

The appearance of a new edition of "Dorland" is always welcomed by medical men, especially those who write or otherwise deal with words, because it is generally looked upon as the standard volume of its type and the final authority on spelling, pronunciation and usage of medical terms.

No attempt has been made to make this work an encyclopedia; it is just what its name implies—a concise, convenient and indispensable word book of the nomenclature of medicine and its allied sciences, with the derivations, pronunciation and meanings of all the thousands of words used in this profession. And yet, in this remarkably small compass, an astonishing amount of information will be found, including a large amount of medical biography, with portraits.

The mechanical features of the book (so important in a dictionary) are beyond criticism: The type is clear; the paper, though very thin, is sufficiently opaque; the material is arranged to facilitate ease of reference; the illustrations, including a number of full-page plates, several of which are in two colors, really illustrate the text; charts and tables are used wherever this is feasible; and the binding is handsome, durable and opens flat.

This new (seventeenth) edition contains several thousand words not previously included and has 80 more pages than the sixteenth edition and more than double the number in the first edition.

This volume should be one of the founda-

tion stones of every medical library, and no active physician can afford to deny himself the help and satisfaction which this new edition will give him, especially when the price is so moderate.

Jeans: Space and Time

THROUGH SPACE AND TIME. By Sir James Jeans, M.A., D.Sc., Sc.D., LL.D., F.R.S., based on the Royal Institution Lectures, Christmas, 1933. New York: The Macmillan Company. Cambridge, England: at the University Press. 1934. Price, \$3.00.

The average casual reader has looked upon most of this author's previous works as being too "hard" and "heavy" for him to assimilate, though they have given much joy to those accustomed to the exercise of thinking.

This is just the book for people who have reached the stage where the current newspapers and magazines have begun to seem a bit weak, as an exclusive diet, but whose intellectual muscles are not hardened enough to manipulate such volumes as "The Universe Around Us" or "The New Background of Science."

In these pages, Sir James takes us on a journey so far through space that our earth looks less than one of the smallest motes in a sunbeam, and so far through time that the whole of human history shrinks to the tick of a clock and a man's entire life to something less than the twinkling of an eye. And all is told so simply and fascinatingly and with such apt illustrations, both graphic and verbal, that any high school student should have no difficulty in understanding it.

This book is cordially recommended as a potent antidote to our trifling human upsets and turmoils, and to all those who are willing to do a bit of easy mental exercise in order to orient themselves in the cosmos. Every physician ought to read it, to broaden and enrich his cultural background.

De Kok: Child Guidance

GUIDING YOUR CHILD THROUGH THE FORMATIVE YEARS. By Dr. Winifred de Kok. New York: Emerson Books, Inc. 1935. Price, \$2.00.

In this volume Winifred de Kok has given parents, and all those interested in the rearing of children, a real "helping hand." As a physician, with a psychoanalysis background, an experienced teacher and a practical and devoted mother, the author is well prepared to give child-guidance.

During the past decade, definite principles relative to child health habits, physical, mental and psychic, have been accepted and made widely available. Here we have a revamping of this knowledge and a rational application of facts toward happy, useful and satisfactory adjustments.

Touching in scope physical, mental and psychic habits, through the proper consideration for childish fears and fancies; tantrums

—often legitimate; a regulated freedom; the creative and educative value of play; and respect for originality and idiosyncrasy, this complete text points to the development of independent, reasonable, happy children. Here the "single-handed mother," who often feels most the discouragement of child problems, is shown the position of greatest advantage by the strategy of child-help-mother activity applied in all ordinary household pursuits. The author gives a new perspective on drastic methods in habit-breaking and shows that close watching and the substitution of more interesting activity, with its accompanying satisfaction, are all that need be evoked in the child. She advocates making sincere, honest answers to all questions, as a stepping stone to future stability in thinking.

This excellent material is enhanced by simple presentation and clarified by the quotation of behavior examples and conversations from the author's personal experiences. Fathers, mothers, physicians, teachers and all who are interested in capitalizing the best in their children cannot afford to miss this book, which is a good one for doctors to read and recommend.

A. M. N.

Tucker: Treatment of Injuries

INJURIES AND THEIR TREATMENT. By W. Eldon Tucker, M.A., B.Ch. (Cantab.), F.R.C.S. (Eng.), Surgeon to St. John's Hospital, Lewisham; Surgeon to the London Clinic for Injuries, Baker Street; Late Registrar, Royal National Orthopedic Hospital. With 80 Illustrations. New York: Oxford University Press. 1935. Price, \$3.75.

When our fathers in the healing art had to treat dislocations, sprains and other injuries of the soft parts, they generally put the joints and other involved structures at strict and prolonged rest—and not infrequently they stayed so permanently. That is why the cures often performed by the "bone-setters" seemed so miraculous.

Nowadays the wise surgeon employs physical methods—manipulation, passive and active exercise and other agencies—at the earliest reasonable moment, and these patients get well promptly.

In this truly valuable and practical little manual, Mr. Tucker has set forth, in detail, the theory and practice of manipulative surgery and other physical measures, in the treatment of injuries to the joints, ligaments, tendons, muscles and other soft parts (fractures are practically excluded), and has illustrated his directions with plenty of simple and practical pictures.

There is scarcely a general clinician in the country (especially a physical therapist) who could not add several hundred dollars a year to his income (to say nothing of the gain to his professional reputation) by the careful study of this book and the daily application of the instruction it gives; so every day without it means lost opportunities.

MEDICAL NEWS



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New Head of Rockefeller Institute

THE Rockefeller Institute for Medical Research has recently acquired a new director, in the person of **Herbert Spencer Gasser**, A.M., M.D., professor of physiology and director of the physiologic laboratories of the Cornell University School of Medicine, New York.

Dr. Gasser, whose picture appears above, is a native of Wisconsin and took his Arts degrees from the University of his home state and his M.D. from Johns Hopkins University. He is 47 years old, a bachelor and began his teaching career as a pharmacologist, having been, among other things, professor of pharmacology at Washington University, St. Louis, from 1921 to 1931, when he went to Cornell.

Important Clinical Meeting

THE first annual meeting of the **Mississippi Valley Medical Society** (See "C. M. & S.," July, 1935, page 364) will be held at Quincy, Ill., October 2, 3 and 4, 1935. The speakers will be clinicians of note from all over the

Midlands, who will give practical talks that will be a real help in the daily work.

Here is a chance for three days of post-graduate work which can not wisely be overlooked. Write to Dr. Harold Swanberg, 211-224 W. C. U. Bldg., Quincy, Ill., for full particulars, and *plan to be there.*

Training Course for Medical Reserve Officers

THE two-weeks' period, October 6 to 20, 1935, has been selected for the seventh annual training course for Medical Department Reservists of the United States Army and Navy, at the Mayo Clinic, Rochester, Minn.

The program will follow the plan which has been so successful in past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoons and evenings will be devoted to medico-military subjects.

The staff and faculty of the Mayo Clinic will present the professional training, while the medico-military program will be under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

Enrollment is open to all Army and Navy Reservists of Medical Departments, in good standing. Applications should be submitted to the Surgeon, Seventh Corps Area, Omaha, Nebraska, or the Surgeon, Ninth Naval District, Great Lakes, Illinois. Enrollment is limited to two hundred.

Civil Service Examinations

THE United States Civil Service Commission has announced open competitive examinations as follows:

Public Health Specialists

Applications must be on file not later than Sept. 9, 1935.

Full information may be obtained from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city which has a post office of the first or second class, or from the United States Civil Service Commission, Washington, D. C.

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Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment, or medicinal supplies. Make use of this department. Ask for clinical samples where these are offered.

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